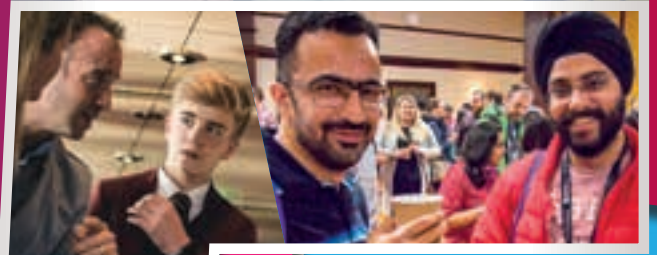


THE ENDOCRINOLOGIST

THE MAGAZINE OF THE SOCIETY FOR ENDOCRINOLOGY

Celebrating 75 years OF YOUR SOCIETY



A word from THE EDITOR...



Happy birthday to us!

This issue of *The Endocrinologist* celebrates 75 years of the Society for Endocrinology. My first contact with the Society was for the BES meeting, several lifetimes ago, at Heriot-Watt University, Edinburgh, in 1998. Those were the days of printing out posters on multiple pieces of paper, using spray glue, and usually managing to glue my fingers to something crucial in the process. If giving a talk, glass slides had to be made at least a week in advance, and then there was the drama of putting them the right way in the cassette wheel (upside down and back to front?).

Now we have PowerPoint and digital graphics, but my enjoyment of the Society for Endocrinology BES conference has stayed the same. It is a wonderful opportunity to learn and network, meet friends, and have some fun.

The articles in this issue reflect all that the Society offers to its members, and also demonstrate all that we do, as members, to contribute to both the Society and to endocrinology in its entirety. Reading everything described here shows that this is an incredible amount. I wonder if we sometimes take it for granted.

Personally, I think what I value most are the strong friendships I have made through endocrinology and Society meetings, and the Society's support for national work on patient safety, such as adrenal insufficiency and diabetes insipidus. We are stronger together and the Society for Endocrinology, with the hard work of the team in the Bristol office, is fantastic at facilitating our collaboration.

I don't know if a learned society usually has a birthday party, but we should start a trend, and make Edinburgh a celebration of the last 75 years (dancing obligatory). I look forward to seeing you there!

HELEN SIMPSON

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www.endocrinology.org/endocrinologist

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Become a contributor... Contact the Editorial office at **endocrinologist@endocrinology.org**

The Society welcomes news items, contributions, article suggestions and letters to the Editor. We would also like to hear your feedback on this issue of the magazine.

Deadline for news items for the WINTER 2021 issue: **1 October 2021.**

ENDOCRINOLOGY COMES TO LIFE ON VIDEO

You can now watch the winners of our 2021 Student Video Award. Under- and postgraduate students were challenged to produce a short video, to engage the general public with endocrinology. The standard of submissions was very high. Find them at www.yourhormones.info/resources/digital-library/student-video-awards-2021.



2021 postgraduate winner Sarah Horgan, Edinburgh Napier University

2021 LEADERSHIP AND DEVELOPMENT AWARDEES

Our ambitious Leadership and Development Awards Programme aims to recognise and nurture emerging talent, to enable our awardees to become the future leaders of endocrinology. Join us in congratulating our 2021 recipients.

Scientist:

Douglas Gibson

Clinical Academics:

Chioma Izzy-Engebeaya
Sinead McGlacken Byrne
Alessandro Prete

Clinicians-in-Practice:

Muhammad Fahad Arshad
Jan Hoong Ho
Nauman Jadoon



SOCIETY CALENDAR

17 September 2021
SOCIETY PRESIDENT NOMINATION DEADLINE

1 October 2021
COMMITTEE APPLICATION DEADLINE

SfE SKILLS ACADEMY WEBINARS

30 Sept-7 Dec 2021

Clinical Skills

14 Oct-1 Dec 2021

Endocrine Nurse Skills

28 Oct-16 Dec 2021

Research Skills

8-10 November 2021

SfE BES 2021

Edinburgh, UK

www.endocrinology.org/events for full details

ENHANCING ENDOCRINE EDUCATION FOR STUDENTS AND PATIENTS

Are you interested in developing your writing skills for non-specialist audiences and in engaging students and the public with the importance of hormones? Then apply to join the You and Your Hormones Content Editor team from November 2021. Find out more and apply at www.endocrinology.org/editors.



PRESTIGIOUS FELLOWSHIPS FOR NURSE MEMBERS

We congratulate Sofia Llahana and Sherwin Criseno, who have each been awarded a National Institute for Health Research Fellowship to further their careers and research in endocrine nursing.



Sofia Llahana



Sherwin Criseno

JOIN THE ENDOCRINOLOGIST TEAM

We have vacancies on our Editorial Board! We want to hear from enthusiastic research scientists, clinicians and nurses, at any career stage, who have a passion for communicating endocrinology. There's never been a more exciting time to join our team, as plans to modernise the magazine will start to take shape in 2022. Apply by 31 October by contacting media@endocrinology.org.

IMPRESSIVE IMPACT FACTOR INCREASE FOR SOCIETY JOURNALS

Our new journal impact factors are a cause for celebration, with increases across the board. We thank the Editorial Boards, authors and reviewers for their tremendous hard work and dedication, and all our readers, who use and cite articles. Together, you ensure that our journals continue to help advance scientific and clinical research in endocrinology.

4.286

5.678

3.478



5.098

3.335

WITH REGRET

We are saddened to hear of the death of Gavin Vinson, Emeritus Professor of Biochemistry at Queen Mary, University of London, and former Editor-in-Chief of *Journal of Endocrinology*. An obituary will be published in a future issue of *The Endocrinologist*.



SOCIETY-ENDORSED EVENTS

23-24 September 2021
OXFORD ENDOCRINOLOGY MASTERCLASS 2021
Oxford, UK

9-10 December 2021
THE ADIPOCYTE ACROSS BIOLOGICAL SCALES
Edinburgh, UK



GRANT AND PRIZE DEADLINES

22 September 2021
PUBLIC ENGAGEMENT GRANT

27 October 2021
PRACTICAL SKILLS GRANT

27 October 2021
MEETING SUPPORT GRANT

10 November 2021
EARLY CAREER GRANT

10 November 2021
ENDOCRINE NURSE GRANT

10 November 2021
EQUIPMENT GRANT

1 December 2021
TRAVEL GRANT

www.endocrinology.org/grants for full details of all Society grants and prizes

SOCIETY FOR ENDOCRINOLOGY OFFICIAL JOURNALS

Society members have free access to the current content of *Journal of Endocrinology*, *Journal of Molecular Endocrinology*, *Endocrine-Related Cancer* and *Clinical Endocrinology* via the Members' Area on the Society website, www.endocrinology.org. *Endocrine Connections*, *Endocrinology*, *Diabetes & Metabolism Case Reports* and *Endocrine Oncology* are open access and free to all. Publishing in *Endocrine Oncology* is currently free.



For this anniversary issue, we invited the Editors-in-Chief to write about a topic of their choice from the Society's journals.

JOURNAL OF ENDOCRINOLOGY

Mechanisms of β cell dedifferentiation in diabetes

Type 2 diabetes represents one of the most significant challenges globally for healthcare systems, owing to its steadily increasing prevalence and highly expensive treatment. The most important mechanism of type 2 diabetes progression is β cell loss, due to apoptosis and also dedifferentiation. Unlike apoptosis, β cell dedifferentiation is a relatively new concept, first proposed less than ten years ago.

One of the most comprehensive and attractive reviews of this topic was published by Bensellam and colleagues in *Journal of Endocrinology*. It extensively covers all aspects of this important pathophysiological process, including its mechanism, aspects at the molecular level, and its consequences.

The β cell dedifferentiation is a very complex process, comprising downregulation of insulin gene expression, downregulation of β cell-enriched genes, upregulation of β cell-forbidden genes and activation of stress response genes. Many experimental data describe possible approaches to reverse the process of dedifferentiation and restore functional β cell mass in experimental

models of diabetes. Interestingly, however, none of these have been really successful in humans.

One of the interesting approaches suggested in this review could be alleviation of β cell stress, which has proved successful in numerous experimental studies. Furthermore, some studies suggest that recent glucose-lowering therapies, including glucagon-like peptide-1 receptor agonists and sodium glucose co-transporter-2 inhibitors, could also act through modification of β cell dedifferentiation.

This review is definitely worth reading, not only by those interested in experimental research in type 2 diabetes, but also by clinicians, as it gives a very broad and thorough perspective on an important mechanism, which might become a valuable target for future anti-diabetic therapies.

MARTIN HALUZIK, CO-EDITOR-IN-CHIEF

Read the full article in *Journal of Endocrinology* **236** R109–R143

JOURNAL OF MOLECULAR ENDOCRINOLOGY

Integrated '-omics': tools for the future

Like them or loathe them, '-omics' approaches have transformed how many of us now interrogate our biological samples. Many are available to researchers, and include proteomics, genomics, transcriptomics, lipidomics and metabolomics, amongst others. On their own, they offer an unbiased way of identifying novel regulators, pathways and networks, to advance our knowledge of complex biological processes, including those of an endocrine nature.

In 1920, the botanist Hans Winkler coined the term 'genome', as a blend of the words 'gene' and 'chromosome', to denote the chromosome set as the material foundations of an organism. This was further developed by Thomas Roderick in 1987. He was the first to use the term 'genomics'. Since then, other '-omics' have emerged and, individually, high throughput '-omics' approaches have allowed scientists to make better sense of the tens of thousands of variables within their biological sample of interest.

On their own, however, the resultant data have their limitations, as proteins, transcription factors, metabolites, etc., do not function in isolation. An

integration of the multi-dimensional '-omics' datasets is required to achieve a meaningful holistic insight into the complex biological question under study. Integrated '-omics' provides the researcher with the tools to investigate biological systems, in order to extract meaningful correlations and identify complex interactions.

This approach has been described in a review by Misra *et al.*, published in *Journal of Molecular Endocrinology*. At present, integrated '-omics' is in its infancy, as the successful integration of more than two '-omics' datasets is currently rare, and many computational and bioinformatic issues are hindering progress. These multi-layered, multifactorial challenges will only grow with the increasing number of datasets now being generated. The review describes these challenges and provides insights into the bioinformatics tools required to develop standard analytical pipelines to make this dream a reality.

COLIN FARQUHARSON, CO-EDITOR-IN-CHIEF

Read the full article in *Journal of Molecular Endocrinology* **62** R21–R45

CLINICAL ENDOCRINOLOGY

Diagnostic *RET* testing: two decades of experience

In the August issue, Jonathan Fussey and colleagues review the Exeter Genomics Laboratory's experience of germline *RET* analysis over the last 20 years.

In this large study of 1,058 index patients and more than 500 unaffected family members, they found overall detection rates of pathogenic variants of 10% and 29% respectively. The rate of germline pathogenic *RET* variants in presumed sporadic medullary thyroid carcinoma (MTC) was significant (8.5%), confirming the value of genetic testing in all patients presenting with MTC. The detection rate in patients with isolated pheochromocytoma, although lower (3.4%), also justifies germline *RET*

analysis in this condition. In contrast, no positive results were obtained in patients with isolated primary hyperparathyroidism, confirming that *RET* analysis in this presentation is a poor use of resources.

Their review is an informative reminder to endocrinologists of the clinical presentations in which germline *RET* analysis is expected to be useful. It is timely, with the recent commissioning of the Genomic Medicine Service (GMS) in the NHS.

ALED REES, CO-EDITOR-IN-CHIEF

Read the full article in *Clinical Endocrinology* **95** 295–302



ENDOCRINOLOGY, DIABETES & METABOLISM CASE REPORTS

Diverse cases of ectopic Cushing's syndrome

Cushing's syndrome from ectopic adrenocorticotrophin (ACTH) secretion is a rare clinical occurrence. Its diagnosis is often delayed due to its non-specific presentation. A number of case reports of ectopic ACTH secretion in *Endocrinology, Diabetes & Metabolism Case Reports* have been particularly instructive.

Faisal and Debono report a case of a 65-year-old man who presented during the COVID-19 pandemic with unintentional weight loss (atypical in Cushing's disease), new-onset type 2 diabetes and resistant hypertension. The presence of Cushingoid features and typical biochemical abnormalities (hypokalaemia and neutrophilia) led to the rapid diagnosis of Cushing's syndrome by endocrine testing. He was diagnosed with an ACTH-secreting metastatic small cell lung cancer and treated with metyrapone.

In addition, Chunharojrith *et al.* report a case of ectopic ACTH secretion from a primary renal neuroendocrine tumour treated with pasireotide and surgery. Finally, Lawrence *et al.* describe a case of ectopic ACTH secretion from a thymic

neuroendocrine carcinoma, controlled by ketoconazole and mifepristone prior to mediastinal surgery.

These cases serve to highlight the masquerading presentation of Cushing's syndrome due to ectopic ACTH secretion, and provide a reminder that the constellation of typical clinical features (diabetes, resistant hypertension, proximal myopathy) with hypokalaemia, neutrophilia and metabolic alkalosis should raise clinical suspicion of this possibility. Rapid control of hypercortisolism with medical therapy, followed by definitive treatment of the culprit tumour, offers the patient the best chance of survival.

JERRY GREENFIELD, EDITOR-IN-CHIEF

Read the full articles in *Endocrinology, Diabetes & Metabolism Case Reports*:
Chunharojrith *et al.* EDM-20-0076
Faisal & Debono EDM-21-0038
Lawrence *et al.* EDM-19-0002

ENDOCRINE CONNECTIONS

A new model of success

Scholarly publication has played a fundamental role in the history of the Society for Endocrinology. *Journal of Endocrinology* was founded in 1939 by several of the leading endocrinologists of the day as a first step in the establishment of the Society, which occurred after Second World War, in 1946. Thereafter, subscriptions to the Journal have provided the single largest source of income for the Society to this day.

A decade ago, the Society was at the vanguard in recognising that scholarly publishing was changing, primarily as a result of the internet. This led to immediate online access to papers and, coupled with the worldwide decline in library budgets, the movement towards open access. In such a scenario, journal subscription income could not be relied upon for the future support of the Society. Hence the decision was made, in partnership with the European Society of Endocrinology, to establish a fully open access, online-only journal. Whilst many questioned the wisdom of this initiative, and Bioscientifica (the Society's commercial subsidiary, which publishes the journals) had much to learn about this new mode of publication, the initiative was a success.

Jens Sandahl Christiansen, the founding Editor, believed strongly that a journal with a broad remit should enable greater 'connections' to be made both within

endocrinology and with intersecting disciplines, and hence *Endocrine Connections* was born.

Since those early days, *Endocrine Connections* has grown. It receives over 500 submissions a year, is included in all the major indexing sites, and has attained an impact factor that is steadily rising. As with all fully open access journals, there are no subscriptions, personal or institutional, and content is freely available anywhere with an internet connection. Authors pay an article processing charge; in the case of *Endocrine Connections*, this is one of the lowest of any endocrine journal, and Society members then benefit from a 40% reduction in that charge.

Subscription journals face a challenging future. It is inevitable that *Endocrine Connections* is the future of scholarly publication by the Society. This is why, as Society members, you should lend it your support by submitting your papers, agreeing to review when asked, and accepting Editorial Board invitations when they arrive.

ADRIAN CLARK, EDITOR-IN-CHIEF

ENDOCRINE-RELATED CANCER

Endocrine cancer progression and metastases

The development and progression of metastases are sentinel events in endocrine cancer that have a direct impact on patient outcomes. Since 1994, *Endocrine-Related Cancer* has provided a central platform for reporting new knowledge in all aspects of endocrine cancer progression, ranging from mechanistic studies through translational studies and clinical trials. In the first volume of the journal, the role of transforming growth factor- β in breast cancer progression was reviewed, alongside various aspects of cancer invasion and progression in prostate cancer and other malignancies, by Mahler & Denis, and Parish.

The breadth of publications on metastatic progression published in *Endocrine-Related Cancer* over the past 12 months has been remarkable. In prostate cancer, Labanca *et al.* emphasised the role of fibroblast growth factors in the development and progression of bone metastases. Tai *et al.* reviewed the role of extracellular vesicles in metastasis, and highlighted their potential utility as biomarkers and therapeutic vehicles. In pheochromocytoma/paranganglioma, Bechmann *et al.* reported on HIF2 α as a predictive biomarker in human tumours and as a functional pro-metastatic factor *in vitro* and *in vivo*.

Song *et al.* reported novel genetic profiles of distant metastatic thyroid cancer lesions, and Creemers *et al.* validated *IGF2* methylation as a predictive biomarker for adrenocortical carcinoma in a multicentre study. Finally, Aydemirli *et al.* and Myrehaug *et al.* reported new treatments targeting *ALK* gene fusions in metastatic thyroid cancer, and everolimus and radiation therapy for metastatic neuroendocrine cancers in the liver, respectively.

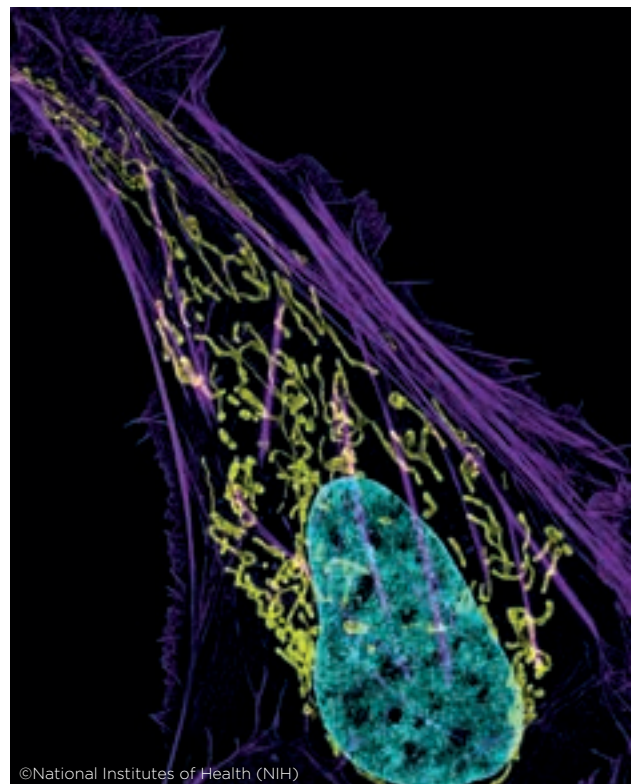
High impact manuscripts, such as these, that report new mechanisms of endocrine cancer progression, identify and/or validate new biomarkers of aggressive cancer behaviour, define new therapeutic targets and report clinical trials will remain key areas of emphasis for *Endocrine-Related Cancer*.

MATTHEW D RINGEL, EDITOR-IN-CHIEF

Read the full articles in *Endocrine-Related Cancer*:

Aydemirli *et al.* **28** 377–389
Bechmann *et al.* **27** 625–640
Creemers *et al.* **27** 541–550
Labanca *et al.* **27** R255–R265
Mahler & Denis **1** 37–52

Myrehaug *et al.* **28** 541–548
Parish **1** 19–36
Song *et al.* **27** 285–293
Tai *et al.* **27** R133–R144



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JULIA BUCKINGHAM: A LIFE IN ENDOCRINOLOGY

Julia Buckingham has supported the Society's growth and development through many roles in her time as a member. Here, Kim Jonas asks her about the changes she has seen, and what they mean to her, to endocrinology and to us all.

We're going to start with quite a tricky question. Which endocrinologist most inspired you?

Geoffrey Harris, and his work in the late 1940s/early 1950s showing the neural control of the pituitary gland. When you think of the technology he had at his disposal, he made extraordinary discoveries. He inspired me to do endocrinology, and I still absolutely rate him as my number one. He was also an incredibly decent bloke who cared about people; he cared about his team, and he cared about endocrinology. I remember when I was an undergraduate, hearing him give a lecture, and I was just absolutely bowled over.

What do you most enjoy about your work?

I love research, but, most of all, I love the people. You meet such amazingly interesting, exciting, creative people from all over the world. And, in a research career, you have huge opportunities. Being able to see fundamental science being translated into clinical practice is unbelievably rewarding.

During the pandemic, as someone who's worked on steroids for most of my life, it was very satisfying to see dexamethasone finding yet another role. The vaccines have been fantastic, because that's a reflection of the really hard slog in molecular biology over the last 25–30 years. We saw how it can be put to use – and put to use incredibly quickly.

I attended a conversation with Kate Bingham at the Royal Society of Medicine online a few weeks ago. At the end, Simon Wesley (the Chair) put up a Gantt chart of the time taken to discover vaccines. At the top was malaria, where the search apparently started in 1880! We have only just found something which will be really helpful; it's in early clinical trials at the moment. And now we have the COVID vaccine, in less than a year, and already getting into people.

We need to think much more creatively about how we can get discoveries into patients – safely, of course, but in a much more efficient timescale. The way the regulators, Government and researchers have all worked together has been inspirational. We really need to learn from this. Hopefully that's what Patrick Vallance's new office will do.

When you remove bottlenecks, and funding limits, it's amazing what can be achieved ... I know you must have seen an explosion in technological developments and scientific advances in your career. What words of wisdom do you have for aspiring endocrinologists?

The world moves on very quickly. Don't do things because everybody else is doing them. Do things because you've got a passion and keep your mind open to change. And if you're going down a blind alley, back out of it very quickly. If you find yourself in a job you don't like, get out of it.

What discoveries and achievements are you most proud of?

I can't answer that one! Well, of course, I've seen many of my students become hugely successful, and that has been very, very rewarding. I've always had fantastic teams; they've all been wonderful people. I've enjoyed working with them and I'm still friendly with a lot of them, which is nice.

When did you attend your first Society for Endocrinology conference?

I vividly remember it. It was at the Middlesex Hospital, London, in November 1972. I gave my first communication. I can still remember how terrified I was: I didn't sleep.

The Society meeting then was so small; we didn't have parallel sessions. It was just one lecture theatre. Of course, there were the medal lectures, and the odd symposium, but that was all, in terms of big lectures. The rest of it was communications. There was a real expectation that PhD students and postdocs would give a communication. I look back on that, not just with immense affection, but also as fantastic training.

It was the place where you could meet colleagues from other places and, in a way, I think we've lost that. I think people networked, particularly young people, much, much more than they do now, because they didn't go with a group. Groups were very small in those days. So, you went along with your supervisor, and possibly one or two other PhD students and postdocs, and you met other people. That's where I developed my networks, which have stayed with me throughout my career. I thank the Society for that, because I don't think it would have happened otherwise; it was a really, really important thing.

You can't underestimate the importance of networking, can you? I think it's something that the Society enabled for me too. We still had the November meeting in London when I joined. And that's where I built up my network.

I honestly agree. The other thing the Society gave us was the opportunity to go to meetings abroad, because of the funding. I certainly went to many meetings that I could not have gone to without the support of the Society. That enables you to create your international networks.

'Being able to see fundamental science being translated into clinical practice is unbelievably rewarding.'

What are your favourite experiences from working with the Society?

When I was Treasurer, I was involved in developing Bioscientifica, which was tremendously interesting. That must have been the early 1990s. It's sort of ironic, because (if I remember rightly) we were worried about open access publishing, and how it would impact the Society's income. Our journals were going from strength to strength, and it was those journals that enabled us to have nice meetings and send our young people off to meetings overseas, and all those sorts of things. So Bioscientifica was set up really



Julia Buckingham

with the idea of creating another income stream for the Society. Of course, it's grown and grown, and been very successful, so that's a very happy memory. I'm pleased to feel I did just a little bit to contribute towards that.

It's been exciting watching the team grow. It was quite inspirational to have the whole of the Bioscientifica team working alongside the people who were running the Society. It was lovely to see how they each understood the value of one another's contribution to the Society's overarching goals.

The increasing engagement of the Society, and things like the development of clinical guidelines, opened up a whole new era of work. Public engagement was something we certainly didn't do in my early days but, during my involvement with the Society, I decided we would develop this area of work, which has been very successful. We started doing events around the country and things like that. It's so important to get our science out to the general public, whether you're doing something very exciting clinically, where the public can see real benefit, or whether you're doing the fundamental stuff, to help the public understand how important it is, to get it to the point where it can be clinically valuable.

It is also crucial to enthuse young people to come into the Society. Endocrinology struggles because we don't have an undergraduate programme. So there isn't a natural pipeline into the field. And I think that remains quite a challenge for us going forward.

How much have your field and research changed during your career?

I haven't done research now for 10 years or so. The field has changed on an unrecognisable scale. When I started, we didn't sequence genomes or anything exciting like that. It took a whole week to assay 10 samples of ACTH. The idea that you can just do mass assays has been absolutely transformational. And, of course, we have molecular techniques as well.

One thing we've lost, and are in danger of further losing, is fundamental physiology. I have a big concern that a lot of very good scientists don't

have a strong background in basic physiology. One great thing about endocrinology is that hormones affect pretty well every cell in the body. So you need to know how the body hangs together. I find it sad sometimes that people are so very focused on one tiny mechanism that they don't really appreciate its importance in the context of the whole body.

I remember when we first started knocking out genes, people were surprised at some of the consequences. Of course, it showed up some really interesting things, but it was very challenging. Some people could relate those findings to help our understanding of whole body physiology. When some didn't understand the outcomes, they thought that the answer was wrong, rather than showing us something interesting and opening up a new avenue for exploration. I'm still not sure we've got the balance right, between being able to get down to molecular and submolecular levels, and all the way up to whole body physiology and its meaning. There is something about endocrinology (and, of course, pharmacology, which is my speciality) which involves understanding the whole body as well as the molecular.

What have been the major milestones in research during your career?

In terms of technology milestones, they're uncountable. Immunogold electron microscopy meant we could actually look at where molecules are in cells and how they interact with one another. Crystallography is another hugely important thing. So there are masses of them. They have all come together to give us a much better knowledge and understanding – but also many more questions.

Some things that epidemiologists have thrown up are absolutely fascinating. And then, of course, if you think of the whole area of developmental programming, for example, that really stemmed out of epidemiology. So, as an endocrinologist, keeping an eye on what is happening elsewhere in science is very important.

What are you most looking forward to seeing in the future of endocrinology?

I guess, things 'getting into' patients. It would be wonderful if we could, for example, solve type 2 diabetes, or find a really good way of handling obesity. There are massive challenges. Equally, we're seeing some brilliant developments in cancers. I'm hopeful that some of the stuff that's come out of the pandemic, in terms of technologies, might be applicable to cancers, but it's not my field. I do think it's ultimately about translating things into improving patient care, and also veterinary medicine and conservation.

If you had a crystal ball, what major changes in endocrine research would you predict in the next 75 years?

Well, it will be so different then, we'll probably all be microchipped. And that's how we'll control hormones, or something like that. It'll be something quite extraordinary that none of us can even conceive now. If we went back 75 years, it would be the end of the Second World War. Could people then have foreseen how we are now? It's just impossible to imagine.

It'll be interesting, seeing how society evolves in that time – and how many new diseases will emerge, triggered by our lifestyle and behaviour, and influenced by our genes. But the idea that we could all have a little microchip, to control all ills, would be brilliant.

Thank you Julia. It's been great speaking with such an inspirational endocrinologist and advocate of the Society.



TOWARDS A BRIGHTER FUTURE FOR ENDOCRINOLOGY RESEARCH



WRITTEN BY CHRIS McCABE

In looking forward to what the future might bring, it's always terrific fun to look backwards first. In the last issue, *The Endocrinologist* reprinted an article from 2000 by Professor John R G Challis (Toronto, Canada), in which he envisioned where we would be by 2020.

He said, 'New genetic techniques, arising in association with the completion of the Human Genome Project, will offer extraordinary new opportunities for partnerships between pharmaceutical companies and academia, in the pursuit of discovery-driven, rather than hypothesis-driven, science. Recognition of epigenetic effects and the role of lifestyle in health performance seem likely to emerge as trends that will influence the spectrum from basic science research to public health policy.'

Continuing, he added, 'In a post-genome world, we may envisage complete genotyping of all individuals, a genome-based pharmacology, animal models for every gene, near real-time measurements of gene transcription, and the microdissection of individual cellular processes.'

I think he did rather well, and I don't expect to be as prescient. It would be professional madness – with uncomfortable annual reminders at each SIE BES conference, as my ill-considered predictions became less and less likely – to try and guess specifically what lies 20 years ahead. For what was brave in 2000 is now foolish in 2021. But maybe this is a game we endocrinologists should play every decade or two: where are we now and where are we heading?

A MAP WITH NO ROADS

Progress in human biology is quickening at an unprecedented rate, with no sign of it slowing down. On the horizon are entirely new ways of understanding and augmenting health. Things are not moving along incrementally. Rather, we feel as if on the perpetual brink of a revolution. But the direction of travel is a map with lots of potential arrival points and no plotted routes. Who knows where we will end up? The future is never linear; it is sideways and lurching and branching and bewildering but, of course, always looks inevitable when looked back upon.

However, it is easy to examine the research technologies we currently have and to note their limitations and compromises. CRISPR is cumbersome and doesn't always get you where you want to go. Mouse models remain slow and expensive. Successful drug design appears inevitable until you test the drugs, and watch as computationally derived compounds become less and less useful as you progress from cells to mice to humans. Cell models themselves are pale and malignant imitations of real life. Easy genomics remain hamstrung by difficult bioinformatics. Modelling the multiple gene interactions which underlie complex diseases such as obesity remains virtually impossible. The future will need to solve these persistent issues in order to allow us to lurch forwards.

BUREAUCRACY VS PROGRESS

One current barrier to progress lies elsewhere, in the increasingly difficult regulatory approvals environment. Progress may be partly about finding new ways of addressing regulatory control and killing unnecessary bureaucracy, whilst still protecting the high moral standards that we all aspire to.

For instance, the protectionist stance of UK universities in material transfers, animal ethics and COSHH assessments (all worthy but dull) could be expedited and made more efficient. We may look back and wonder exactly why we bound our researchers so tightly in red tape, which slowly strangled creativity, competitiveness and progress, while there were urgent endocrine problems to solve.

Most of us carry out our research within the strictures of the university system. The academic career has become a terrible choice of career, however. Metricised to death, enumerated into early defeat, beholden to the short term whims of grant funders and slowly destroyed by the good intentions of senior

management, it is death by a thousand new initiatives, all of which seem to destroy momentum.

We look enviously at those colleagues who work in dedicated research centres, and who somehow manage to carry out their work unencumbered by undergraduate teaching, postgraduate supervision, clawing administration, permanent grant writing, endless form filling, exam setting, student tutoring, and damned Research Excellence Framework impact cases. Some of these scientists may even have parking spaces.

If we were to invent *de novo* structures in which medical research could flourish, they would look almost polarically different to 21st century universities. However, one thing that they do foster is an altruistic interface between clinicians and basic scientists. Crossing disciplines remains paramount for future progress. We need new ways of scientific interaction that spark game-changing interdisciplinary advancement. In this regard, endocrinology is already primed, being the very broadest of broad churches, and interdigitating with multiple other branches of science and medicine, including drug design, chemistry, biomaterials research, advanced surgery and radionuclide imaging, etc. Professor Challis envisioned direct partnerships between pharmaceutical companies and academia, and this remains a model which might still bear fruit.

FAITH, FUNDING AND AN IDENTITY CRISIS

Future progress also clearly depends on current research funding. Which, in turn, depends on how the Government and public feel about the importance of research versus (for example) nuclear submarines or albino pachyderm railways. A lot was hanging therefore on the ability of scientists to rescue us from COVID. The public's faith in science has been enhanced by the demonstrable progress that epidemiologists, virologists and vaccine specialists have made in tackling the pandemic. Even endocrinologists are getting in on the act. Will this mean enhanced funding opportunities for us? I'm not sure it will.

Endocrinology as a fundable discipline is in deep identity crisis. In three years of chairing the Wellcome Trust Basic Science Interview Committee, and a further three years as a panel member, I think that maybe three or four of the approximately 1,000 Sir Henry Wellcome Fellowships that I read dared to throw the word 'endocrinology' in. I'm not sure any were funded.

Of course, in more clinical schemes, where there lies a direct line of sight from the patient to the research question, the stats will be more favourable. They could hardly be less so. But we have to face the fact that funding favours the endocrinologists who masquerade as cell biologists, developmental biologists, neuroscientists, cardiovascular physiologists, metabolism workers and cell signalers. Unfortunately, semantics like this matter when a learned society such as ours seeks to protect its future identity, to support its members and to advocate for research support. This remains a difficult challenge for the Society for Endocrinology.

But there is room for optimism. In my own field of endocrine cancer, progress measurable in additional months of life – maybe the noblest of all currencies – is being made. New strategies for the treatment of diabetes and obesity are constantly being appraised. Our ability to understand complex endocrine disorders is accelerating. Progress will inevitably depend on now evolving the correct structures, finances and environments in which to allow ideas to become treatments.

So, if I had to look 20 years ahead, I think the future is simple: enhanced technologies furnishing novel mechanistic insights into human disease which inform new strategies for drug design to provide the raw material for enhanced treatment. I look forward to being proved wrong in two decades' time.

CHRIS McCABE
University of Birmingham

CLINICAL ENDOCRINOLOGY: LOOKING TO THE FUTURE



WRITTEN BY HELEN SIMPSON

Happy birthday to us! 75 years and still going strong.

As clinicians, patients are at the centre of all we do. Around 60–70% of members of the Society for Endocrinology are involved in patient care, so the Society has a key role in underpinning excellence in this area. Clinical members fall into many categories – medical students, specialist registrars and consultants, nurses, clinical academics – each with differing needs.

THE IMPACT OF COVID-19

The COVID-19 pandemic has hit clinical endocrinology hard. Many clinicians were moved into COVID surge duties previously and, as I write, are again. We have all learnt to work differently. Outpatient activity went virtual in March 2020 and we have not seen some of our patients face-to-face for the duration of the pandemic. Many training meetings were cancelled and, when we were able to hold meetings, they moved online. As we face another wave of the pandemic, it is evident that we will have to work differently for some time to come.

The shape of the future is not yet known, and the impact of all of this is impossible to quantify. But what is clear is that we have actually kept everything going, and we deserve a huge ‘well done’.

The Society for Endocrinology has provided strong clinical leadership. The Clinical Committee issued a COVID-19 resource for managing endocrine conditions early in the pandemic, and the Steroid Emergency Card was launched. The Future of Endocrinology working group issued a document, *Planning and Recommendations for COVID-19 Second Wave*. This provided advice and resources although, with the varying pressures of each successive wave, I do think that we will have to carry on adapting in our individual institutions.

EXCELLENCE IN CLINICAL CARE

Any advances in the practice of endocrinology can only come to fruition if services are able to offer excellence in clinical care. It may not seem very ‘sexy’, but if our patients cannot get their appointments at the right time, in the best place for them, with the most appropriate healthcare professional, we cannot translate any research into improved patient outcomes. There is very little evidence that a routine clinic appointment is of clinical utility and, with advances in electronic patient records, patient portals and virtual clinics, we have an opportunity to work differently.

Stealing from a colleague at University College London Hospitals, we need to become ‘hospitals without walls’, to reimagine our services. The Future of Endocrinology working group has set out to provide support for us to do this across three domains:

- education and training
- the primary care interface and
- digital care options and models of care (including patient self-care).

A Resource Hub is being developed to be hosted on the Society’s website, so we can share examples of different types of clinical practice and service development. The Clinical Committee and Society staff must ensure that the Resource Hub is a continually evolving, updated and effective tool that can be used and adapted by members throughout the UK. There must be time at the SIE BES conference to make this an iterative process, and provide opportunities to learn from each other. There needs to be an acknowledgement that service development and quality improvement are key to what we do on a daily basis, and should have equal standing to other disciplines. We also need to acknowledge that a ‘one size fits all’ solution does not work. As Don Berwick (Chair of the 2013 review *Improving the Safety of Patients in England*) says, homogenised medicine is bad medicine.

There is an appetite to continue the wonderful collaborations and networks we have created during the life of the Future of Endocrinology working group and it would be a lost opportunity not to build on these.

PUTTING PATIENTS FIRST

Working with patient support groups is also key. We (clinicians) are very good at deciding on metrics to assess outcomes, or devising research questions, but how about working on what matters to patients, such as PROMS (patient-reported outcome measures) and PREMs (patient-reported experience measures)? For example, do we know that individuals with short stature worry about this – or are other issues, such as fertility, more important to our patients? We will only deliver truly excellent care when we blend patients’ needs with our clinical practice. That means listening to and hearing what patients say.

THE IMPORTANCE OF TRAINING

Another challenge for endocrinology is the dominance of general medicine for clinical trainees. This was an issue pre-pandemic, but COVID-19 has had a devastating impact on training in endocrinology. Many trainees have had their education disrupted by repeated redeployments, service changes, postponement of examinations, personal illness or shielding. Many trainees have experienced significant psychological trauma during the pandemic, and we are all tired/burnt out. IMT3 training means that there will be 4 years of training for those not undertaking a period of research. This is not long enough to train an endocrinologist. The Society for Endocrinology is in a powerful position to lobby and work with partners to highlight the risks of shortened training for the future of endocrinology.

SUPPORTING RESEARCH

Lastly, the Society is developing a research strategy. Many endocrine disorders are rare, long term conditions and it can be difficult to get funding for pilot data. In addition, single centres are generally underpowered to yield meaningful data. The Society for Endocrinology is ideally placed to build on collaborations and networks for data collection, and we can work nationally rather than in our individual silos.

However, if we are serious about healthcare professionals being involved in research, we need to be given time to do this. Those of us who are NHS-funded do research activities in our own time. This is not a sustainable model, especially for those with caring and parenting responsibilities outside work. In this new world, where there are extremely high rates of burnout, there should not be an expectation to perpetually work during our evenings and weekends.

WE ALL HAVE A ROLE TO PLAY

My final reflection is that the Society is made up of its members: so, when we think about the future, we are all beholden to make a difference. We should get involved, contribute, network, mentor, support each other during these horrible times, and share knowledge and information. It’s not about us, it’s about our patients. At a micro level, it’s each patient contact – be it virtual/digital or face-to-face. At a macro level, it’s ensuring our clinical services evolve to provide excellent care in the new pandemic world we are facing.

The Society for Endocrinology has a broad base, well structured committees and networks, with space for everyone. The Society brings us together, and it is we who will make a difference for the future.

HELEN SIMPSON

Conflict of interest: Full-time NHS clinician in a tertiary centre.

EMBRACING THE DIVERSITY OF ENDOCRINOLOGY

Our members make the Society. Your hard work, stories and aspirations have all contributed to our phenomenal journey over the last 75 years, and will form the foundations of our future successes.

Here, we capture a true flavour of all our members' experiences and really highlight the value of being part of our endocrine community. Your comments reflect the diversity of our membership, in background, career stage, career type and geographical location.

WE ENDOCRINOLOGY BECAUSE...

“... you can be whoever you want to be as an endocrinologist. It can cater to the academic, researcher, clinician, or all of the above. It never gets dull, due to the different organs that we manage and the fascinating interaction of hormones with body systems.
Haris Khan, Salford Royal NHS Foundation Trust

“... hormones play a pivotal role in regulating every aspect of our health and well-being. Understanding the mechanisms involved, whilst a massive and ever-evolving challenge, gives us new opportunities to improve well-being and treat disorders that affect millions of people!
Philippa Saunders, University of Edinburgh

“... it impacts every aspect of human health and disease.
Gareth Nye, University of Chester

“... it affects everything, in complex and nuanced ways, and this balancing act is the key to healthy physiology.
Douglas Gibson, University of Edinburgh

“... I've always really enjoyed having hypothesis-driven conversations, and not knowing what is to come is exciting. I find it really interesting solving mysteries and working on something that has a high impact on human health.
Steve Millership, Imperial College London

“... of the small gap between underpinning science and clinical practice.
Robert Semple, University of Edinburgh, NHS Lothian

“... many patients with endocrine conditions go undiagnosed or misdiagnosed for a long time, so, when you make the right diagnosis and instigate the right treatment, they feel and do so much better, and you often see it unfold in front of you.
Julia Prague, Royal Devon and Exeter NHS Trust, University of Exeter

“... it provides a varied clinical practice, with lots of tests and interpretation to be done.
Rob Murray, Leeds Teaching Hospitals NHS Trust, University of Leeds

“... it encompasses the whole body system and has so many possibilities for research to improve patient care.
Alexander Comminos, Imperial College London, Imperial College Healthcare NHS Trust

“... it's all about how your body communicates with itself to achieve big effects and changes we can see and feel.
Lorna Smith, King's College London



“... it's fun, scientific and you can improve quality and quantity of life.”
John Wass, University of Oxford

“... it addresses a big, beautiful, almost infinitely complex and responsive system.”
Jonathan Seckl, University of Edinburgh

“... it's fascinating and dynamic.”
Miriam Asia, University Hospitals Birmingham

“... we work closely with multiple other specialties (radiology, surgery, oncology, paediatrics and obstetrics to name a few), which means you have so much to offer your patients - many of whom you will care for over several years.”
Shazia Hussain, Royal London Hospital, Barts Health NHS Trust

“... you can make people better with hormone replacement!”
Shareen Forbes, University of Edinburgh

“... hormones govern every element of our lives and how we relate to each other - sort of like 'The Force'.”
Channa Jayasena, Imperial College London

“... of the patient interaction and enjoying being a contact person for them if they are in need of help or reassurance with their condition. I find it very rewarding when you can see the difference in patients' well-being, and can empower them to manage their condition.”
Emily Falconer, Maidstone and Tunbridge Wells NHS Trust

“... I assess each patient and reason from scratch; it's never boring.”
Rachel Crowley, St Vincent's University Hospital, University College Dublin

“... solving research problems gives me a great sense of satisfaction. It's a challenge and a lot of the time things go wrong, but then, when you see a result which you recognise is important, and you can present it successfully to your peers, it makes all the hard work worthwhile.”
Anne White, University of Manchester

“... it is so diverse and links with all other specialties.”
Annicc Mukherjee, Spire Manchester Hospital, University of Manchester

“... hormones interact with so many shared biological processes to regulate normal physiology and, when perturbed, provide invaluable insights into pathology.”
Hilary Critchley, University of Edinburgh

“... it gives me the feeling of being a wizard. This might sound odd, but imagine a sprinkle of a hormone released elsewhere in the body, able to control and manipulate an entire body system on a completely different side of the body. On a serious note, I enjoy the delicate mechanisms by which hormones are able to control the functioning of the body and the joy of restoring good health by making slight adjustments to the hormone systems :)”
Punith Kempegowda, Institute of Metabolism and Systems Research, University of Birmingham

“... it has a direct impact on patient management, with various new therapies already being available and new ones being constantly developed. From the professional point of view, it is a great opportunity to be a part of these changes.”
Justyna Witzak, University Hospital of Wales

Want to share why you love endocrinology?
 Tell us more at www.endocrinology.org/anniversary

THE CONTINUED EVOLUTION OF EDUCATION AND TRAINING

Throughout the Society's history, the rapid development of our discipline has driven the growth of endocrine education and training. Indeed, the advancement of scientific and clinical education is at the forefront of the Society's objectives. Here, our contributors reflect on significant recent steps supporting the development of endocrinologists today.

TRANSFORMING TEACHING IN HIGHER EDUCATION



Higher education has changed a lot over the last couple of decades. I struggle to think of a single learning objective I was given during my own undergraduate studies. More shamefully, I remember the affront I felt early in my teaching career when asked to provide them for the students I was to teach. 'But surely,' I thought, 'they simply need to learn *every single thing I tell them...*'

Learning objectives are perhaps symbolic of greater shifts which have transformed teaching in higher education. The

National Student Survey, the Teaching Excellence and Student Outcomes Framework, a firmer line from Government via the Office for Students and – perhaps most importantly – students' increased expectations have accelerated supportive and student-centred teaching practices. They have provided further impetus to the professionalisation of teaching in higher education.

No longer is it sufficient to lure a scientist from their lab and then shove them in front of their audience with a PowerPoint presentation, a laser pointer and the ability to speak at length on their own pet subject. Higher education providers cannot simply assume that the teaching they provide is adequate. Teachers are now specifically taught how to teach, a skill that it had previously been felt they would absorb by pedagogic osmosis, as they ascended the ranks of academia.

I think most academics would agree that these changes have been largely positive, though many would also query the blind use of teaching metrics and highlight the sometimes reduced opportunities for students to use their own initiative and to develop intellectual independence. I have spoken to others who also have concerns regarding students' critical thinking and laboratory skills when they make the leap from undergraduate to postgraduate courses, though many programmes do provide excellent training.

I fear that I myself overestimated the practical skills I actually possessed on leaving university. I try not to think about the incident in the first week of my first technician post when I dropped a flask containing, oh, several litres of some nasty volatile organic chemical... Though, during long dark nights of the soul, I can still picture my new work colleagues trooping past me, giving sad shakes of the head as they were evacuated to the keening accompaniment of the emergency klaxon.

THE IMPACT OF A PANDEMIC

COVID has, of course, brought further challenges. While the media and the public may argue over who is responsible for the extent of the pandemic, when lockdowns should have occurred, and whether 'freedom day' channels Braveheart or reflects another fact-free rhetorical flourish, most people agree that students have had a bad time of it of late.

Remote or virtual learning has had many benefits, and the pandemic has undoubtedly accelerated the use of helpful teaching technologies in higher

education. The Society for Endocrinology has curated a series of online webinars to support its early career members during lockdown, when training opportunities have been limited. But inspiring the next generation is tough when work experience is cancelled and outreach events are conducted over Zoom, and many current students desperately want to be taught in person.

They fear they are missing out on the core experiences of university, have recognised how difficult it can be to make and maintain friendships in virtual spaces, and feel that there are also educational advantages to being taught 'in real life'. Weighing their needs against those of other students who quite reasonably worry about their own safety and endangering their loved ones will prove a difficult challenge for the next academic year.

APPLICABILITY TO POSTGRADUATE RESEARCH

The focus on standardisation of teaching has certainly had many positive effects for the dreaded 'student experience' at undergraduate and postgraduate taught levels, but has proven more difficult to apply to postgraduate research training. A large proportion of PhD studentships are now affiliated with Centres for Doctoral Training or Doctoral Training Partnerships, which typically provide excellent training in transferable skills and the advantages of being embedded in a cohort, but which still struggle to standardise the PhD experience.

Indeed, it is difficult to see how such an experience can be standardised. There has been a welcome push for research groups to implement positive and inclusive work and research cultures, and increased focus on student support, but the breadth and variety of scientific training and research, the diversity of research groups and the subjectivity of the PhD student experience make it a tough ask. A PhD is required to make a novel contribution to the field, to bring something new to the party, meaning that every project must be different.

Perhaps a more useful aspiration is to develop a modern research culture that will negate this need for standardisation. Current undergraduate teaching practices, and their modification in response to student feedback, can sometimes seem designed to remove all uncertainty from the student experience, an approach that translates poorly to the postgraduate research environment. But, if we can make sure that all PhD students are supported and have the opportunity to flourish, if we can better define the career pathways available, the expectations their supervisors have of them and that they should have of their supervisors, perhaps we can mitigate against this fear of uncertainty and the unknown.

After all, unpredictability is one of the defining features of research. We do the experiments because we don't know the answer to the question. Maybe PhD students will have a more enjoyable and fruitful experience if we can convince them that this uncertainty is not only an important component of the research process, it is also one of the reasons that research is so much fun.

KEVIN MURPHY

Professor of Endocrinology and Metabolism, Imperial College London

EDUCATION AND TRAINING OPPORTUNITIES FOR NURSES

The primary goals of nursing education within endocrinology have evolved dramatically over the years. Nurses have to be prepared to meet diverse patients' needs, to function as leaders and to advance science that benefits patients and develops the capacity of health professionals to deliver safe, high quality, evidence-based patient care.

At the same time, nursing education needs to be transformational, to prepare nurses to work collaboratively and effectively with other health professionals in a complex and evolving healthcare system in a variety of endocrine settings.

Early career nurses require enablers to allow them to evolve and become the future leaders in endocrine nursing. This is underpinned by academic preparation. Nurses who are more advanced in their practice require level 7 or 8 graduate programmes and opportunities to apply for research grants etc., to progress and provide inspirational leadership for nurse-led care, demonstrating exemplary practice.

Advanced nurse practitioners and consultant nurses demonstrate expert clinical practice, advising on diagnosis and prognosis. They have advanced history-taking skills, prescribe and can efficiently implement and run nurse-led clinics, which optimise operational and service development. They become enablers to set, monitor and audit standards, locally and nationally. They are able to develop and provide educational activities to support and enhance effective evidence-based multi-disciplinary clinical practice.

Over the last 20 years, the Society for Endocrinology's Nurse Committee has identified these learning needs and has successfully launched the following four major initiatives to develop the role of the endocrine nurse.

THE COMPETENCY FRAMEWORK

The *Competency Framework for Adult Endocrine Nursing* is now in its second edition,¹ with the third in progress. It focuses on core knowledge, skills and interventions that are specific to nurses working as adult endocrine nurses. The Competency Framework is designed to enhance the professional development of endocrine nurses by helping them:

- deliver consistently high standards of care
- identify their level of practice and plan a career in a more structured way
- pinpoint personal educational and developmental needs
- realise their potential more effectively
- seize opportunities to influence the direction of nursing.

MASTERS-LEVEL LEARNING

Worth 40 credits (level 7), the Oxford Brookes/Society for Endocrinology Masters double module is suitable for distance learning for nurses across the UK and worldwide (www.endocrinology.org/careers/training-and-resources/courses/masters-level-module-in-endocrine-nursing).

It complements a wide range of nursing courses already provided by Oxford Brookes University. The credits can be directly counted towards the Oxford Brookes University MSc in Health Sciences or transferred to Masters-level qualifications at other institutions.

The module is ideal for endocrine nurses who are familiar with reflective portfolios and working with the Society's *Competency Framework for Adult Endocrine Nursing*. Academic rigour is assured by assigning an academic mentor to support the nurse candidate in completing a reflective essay. The student also has a clinical mentor.

The Society is able to offer a small number of scholarships to fund registration with Oxford Brookes University.

FINANCIAL SUPPORT FOR RESEARCH

The Society for Endocrinology Nurse Committee encourages nurse members to undertake small audit or research projects, focusing on potential ways to improve nursing or clinical practice.

The Endocrine Nurse Grant (www.endocrinology.org/grants-and-awards/grants/endocrine-nurse-grant) provides financial support to complete a project from beginning to end or to gather preliminary data to support a larger piece of work.

You may only need a small sum, but you can apply for amounts up to £5,000 for larger projects.

THE PRESTIGIOUS NIKKI KIEFFER MEDAL

In honour of the great work that nurse member Nikki (Veronica) Kieffer contributed to our Society, the Endocrine Nurse Award has been replaced with the Nikki Kieffer Medal from 2021. This medal recognises individuals who have demonstrated innovative and successful nurse-led initiatives in the endocrine field that have advanced best practice in patient care, education, or research.

Nikki sadly passed away in 2019. She was the inaugural winner of the Endocrine Nurse Award, and a key part of our Society, where she served as Chair of the Nurse Committee, led the development and publication of the *Competency Framework for Adult Endocrine Nursing* and championed the creation of the Oxford Brookes/Society for Endocrinology Masters module in Endocrine Nursing.

ANNE MARLAND

Endocrine Lead Nurse, Oxford Centre for Diabetes, Endocrinology and Metabolism

REFERENCE

1. Kieffer V *et al.* 2015 *Endocrine Connections* 4 W1–W17.



FROM PhD TO FELLOWSHIP: CREATING A NICHE

Ever since I was a PhD student at the Institute of Reproductive and Developmental Biology, Imperial College London, it was clear that a certain financial independence was necessary to pursue my scientific interests. Indeed, when I got the four-year President's PhD scholarship, I had already accumulated research

experience abroad, thanks to two different scholarships awarded by 'Sapienza' University of Rome and the University of Bari 'Aldo Moro'.

Throughout my PhD, I was extremely lucky to work with supportive colleagues, attend several international conferences and collaborate with various research groups. Moreover, my principal investigator gave me the scientific freedom to propose and test my own research ideas. This was essential to develop trust in myself as a scientist and to start conceiving my own research projects.



When approaching the end of my PhD, I began thinking about the path to independence as a principal investigator and applied for my first ever grant: the Society for Endocrinology Early Career Grant, which is a great way to start applying for your own funds. I found both the application and the review process straightforward. This is helpful when dealing with this kind of application for the first time and/or being in the final months of your PhD, busy with thesis writing, paper revision and job interviews.

Getting this grant was a milestone in my career, as it provided me with the financial means to pursue my research interests and publish other research articles. Most importantly, it allowed me to acquire the experience in grant writing that was fundamental to what I consider the biggest achievement of my academic career: being awarded a Sir Henry Wellcome Postdoctoral Fellowship in 2019.

This award was the fruit of a combination of my interest in G protein-coupled receptor (GPCR) biology (which I developed from my Bachelor's degree and throughout my PhD) with new ideas and insights arising after joining the Interdisciplinary Institute for Neuroscience in Bordeaux for my postdoc in 2018. Indeed, even though my research has always focused on the mechanisms regulating GPCR function, I have continuously tried to expand my expertise by working on different models, techniques and physiological contexts. My aim was to find an area not much explored (or

too neglected!), where I could start investigating and answer my first scientific questions.


The journey to get to my fellowship was not easy. I had to apply twice before I was successful: the application process was long (preliminary and full application, then interview), it required time and thorough preparation. However, the experience gained through previous applications, as well as the support from my hosting laboratories, patience, motivation and, above all, trust in myself and in my research project, helped make it feasible.

If you are planning to find or, better still, carve your own research niche, do not just wait for the head of your lab to propose an extension to your contract. Instead, create your own path, seek challenges that contribute to building that path and make you stronger in the process, make your own decisions and ask for help from people who have already been through the same challenges and can support you.

SILVIA SPOSINI

Sir Henry Wellcome Postdoctoral Fellow, Institute of Reproductive and Developmental Biology, Imperial College London, and CNRS, Interdisciplinary Institute for Neuroscience, University of Bordeaux, France

THE NEW CURRICULUM IN ENDOCRINOLOGY AND DIABETES



The Shape of Training review catalysed reform of postgraduate training for doctors, ensuring it is more patient-focused, more general in the early years, and has increased career flexibility. This chimed with the Future Hospital Commission and the Francis Inquiry report. An ageing population results in increasing complexities and multiple morbidities, requiring physicians to have broader capabilities.

The Joint Royal Colleges Postgraduate Training Board (JRCPTB) is responsible for the development of new curricula for physicians, which will be approved by the General Medical Council. The Specialist Advisory Committee for Endocrinology and Diabetes was tasked with the development of the curriculum for our area, which is a group 1 specialty (dually training with internal medicine).

This was an opportunity for a complete overhaul of our curriculum. The new curriculum is a collaborative and inclusive effort. We started with strong design principles and wanted to develop a document that would guide the training of highly competent consultants in our specialty, capable of providing leadership and fulfilling their evolving roles in the modern NHS: more than pure technical competency. The curriculum is a broad document that encapsulates the entire training pathway, culminating in specialist certification. It will take effect from August 2022.

There is a strong emphasis on the development of essential human skills, such as leading and managing multidisciplinary teams. The document needed to be as future-proof as possible, to reduce the administrative burden for trainers and trainees, and to be more meaningful.

CAPABILITIES IN PRACTICE

One of the key developments is the introduction of capabilities in practice (CiPs) which are higher level evaluations of capabilities rather than atomised competencies. There are CiPs for internal medicine which are

common across all group 1 curricula, and seven CiPs which are specific to endocrinology and diabetes.

A non-exhaustive list of presentations and conditions will guide acquisition of specialist skills and should help trainers identify training requirements. A system of entrustability will lead trainees from close supervision through to independent practice. The GMC's generic professional capabilities are interwoven through the document. The curriculum is a spiral, with cumulative acquisition of competencies through repetitive exposure.

ENSURING SUCCESSFUL IMPLEMENTATION

The challenges to successful implementation could be structural or human factors. The main concerns are associated with accrediting in internal medicine and endocrinology and diabetes in four years. There is a requirement for an indicative year of internal medicine in the four years of training. The JRCPTB is proposing models by which internal medicine and specialty curricula can be delivered, serving as implementation guidance. We have campaigned for some time to protect specialty training from the impact of internal medicine service requirements. Progress is being made, with endocrinology and diabetes gaining parity with other group 1 specialties, to ensure that our training models are similar and there is no unfair burden of service. Supervisors will need training with regards to the new learning requirements and CiPs, and there will be an inevitable learning curve.

The curriculum is an important component of the machinery required to develop highly capable specialists in endocrinology and diabetes, but by no means the only one. Other important factors include training facilities and environment, and the quality of trainers. Technologies will need to be developed to enhance and deliver some of the learning across the UK.

We believe that the future of training is exciting and the enhancements will result in further improvements to the quality of endocrinology and diabetes training in the UK.

ASIF ALI

Chair, Specialist Advisory Committee for Endocrinology and Diabetes, and Consultant Physician (Diabetes and Endocrinology) and Associate Dean, Health Education England, Thames Valley, Milton Keynes

THE CHANGING ROLE OF ENDOCRINE NURSING



WRITTEN BY JOANNE BROWN AND EMILY FALCONER

AN IMPORTANT ROLE IN PATIENT CARE

Endocrine clinical nurse specialists (CNSs) are autonomous practitioners with specialist nursing knowledge who can work in many areas of endocrinology.

We can have an impact on waiting times for patients by running nurse-led clinics. Here, we are well placed to provide evidence-based practice, education and advice, including verbal, written and practical demonstration (e.g. intramuscular hydrocortisone injection). Repetition of this education is important, so providing a consistent contact for patients is beneficial. Educating patients empowers them to manage chronic conditions, make informed choices and support self-care, as does signposting resources and support groups.

We are able to assess, plan and manage programmes of care, including the performance of dynamic testing. Through monitoring and evaluating a patient's progress, care plans can be continuously modified. CNSs can be involved in triage and respond to clinical questions through referral processes, interacting with different care providers. We also support the multi-disciplinary team within hospital trusts with education. By consulting with and advocating for patients, we can help shape services via trust management links.

CURRENT TRAINING NEEDS AND ROLES

By regularly evaluating and reflecting on the services we provide, we can highlight areas for improvement and seek knowledge and training opportunities to achieve the highest standards in practice. It is the responsibility of the individual to recognise and escalate any gaps in knowledge, and to seek the assistance of others or the Society for Endocrinology to assist with learning or provide support.

As CNSs and experts in our field, we should strive to be competent and confident in the service we provide for our patients. Guided by the *Competency Framework for Adult Endocrine Nursing* (second edition; www.endocrinology.org/careers/training-and-resources), we shall aim to achieve a high level of knowledge and competency within our area of specialty through reflection, patient care and evidence-based practice.

We shall continue to overcome the obstacles to training presented by COVID-19, making use of online avenues such as webinars, group discussion, data collection and online networking. Early last year, data collection identified the additional training requirements of early career endocrine nurses. These included online training, an online resource page, a mentorship system and the chance to build connections and network. The Society for Endocrinology has since offered numerous training opportunities, including nurse-led webinars, 'Lunchtime Chats', online surveys and conferences.

FUTURE TRAINING NEEDS

Through data collection and analysis, we can evaluate the current and future status of the endocrine CNS community, highlighting the levels of experience and areas for development, and the training needs of individuals and trusts. This information can then be used as a focal point to guide relevant training, suitable to appeal in the current climate. As the knowledge and understanding of endocrinology are expanding with services developing across the country, future training will be required to ensure the CNSs needs are met. Hence networking and providing peer support and connections are essential to streamline the endocrine service on a national scale.

Feedback from early career nurses has introduced the concept of a mentorship system. This aims to pair senior and junior nurses from across the country, to assist and support each other in their personal

and professional growth, and to streamline services to mould the future of nursing in endocrinology. As well as demonstrating the numerous possibilities within endocrinology, it will emphasise the field's vast range of nursing career opportunities.

'We should also continue to support and encourage nurses to complete academic qualifications ... as these are beneficial both to patients and to career progression.'

As the demand for nurse-led clinics increases, there will be an additional need for training in sub-specialties. We would like to continue the training and support surrounding nurse-led clinics, such as subject knowledge, accountability and legal matters, prescribing and the running of nurse-led clinics to achieve optimal care for our patients.

HOPES AND THOUGHTS ON THE FUTURE

We should promote the diversity of the endocrine CNS role, and encourage nurses from all backgrounds who have transferable skills to consider a career in endocrinology.

We should also continue to support and encourage nurses to complete academic qualifications, such as the non-medical prescribing course and the MSc Module in Endocrine Nursing, as these are beneficial both to patients and to career progression. It is inspiring to see career development and opportunities such as advanced nursing practice, clinical leads and nurse consultant posts. Roles in academia and research are also continuously developing.

We would like to see more CNSs presenting at national conferences (e.g. presenting a patient case or showing the achievements of a quality improvement project). A lot of interesting work is carried out in hospitals across the country, and this sharing of ideas could benefit many patients nationally or even internationally.

Many larger teaching hospitals have developed their services through condition-specific sub-specialty nurses. It will be interesting to see if these roles develop within district general hospitals if those departments expand.

As a national group of CNSs, we support each other with policies, protocols, guidelines and patient information leaflets. It could benefit nurses who are new to this role if hospitals in neighbouring areas or regions worked together to support practical skills education (e.g. through dynamic function testing or exposure to specialist nurse-led clinics). Regional maps of CNS contacts for peer support could be considered.

The future role of the endocrine CNS is exciting and full of possibilities and opportunities. It's a fantastic time to have this role and develop within your areas of practice.

JOANNE BROWN

Endocrine Clinical Nurse Specialist, Stockport NHS Foundation Trust
Society for Endocrinology Early Career Steering Group

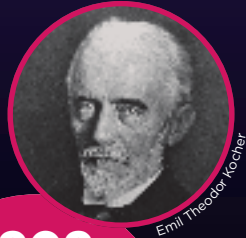
EMILY FALCONER

Endocrine Specialist Nurse, Maidstone and Tunbridge Wells Trust
Early Career Representative, Society for Endocrinology Nurse
Committee and Early Career Steering Group

MILESTONES IN ENDOCRINOLOGY

1869

Paul Langerhans discovers a unique group of cells in the pancreas



Emil Theodor Kocher

1909

Emil Theodor Kocher awarded Nobel Prize in Physiology or Medicine for work on the physiology, pathology and surgery of the thyroid

1902

Bayliss and Starling identify first hormone, secretin

1905

Starling coins the term 'hormone'

1927

Fred Koch isolates testosterone from bull testes



1939

First issue of *Journal of Endocrinology* published

1941

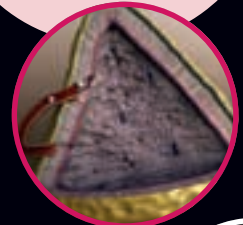
Castration first used as a treatment for prostate cancer

1951

Norethisterone discovered, heralding development of oral contraceptives

1950

Edward Calvin Kendall, Tadeus Reichstein and Philip Showalter Hench awarded Nobel Prize in Physiology or Medicine for their discoveries relating to the hormones of the adrenal cortex, their structure and biological effects



1930

Willard Allen and George Corner discover progesterone

1946

Saul Hertz develops radioiodine therapy for targeted thyroid treatment

1923

Frederick Grant Banting and John James Rickard Macleod awarded Nobel Prize in Physiology or Medicine for the discovery of insulin



1852

Richard Owen discovers parathyroid glands in rhinoceros

1850s

Adrenal glands shown to secrete active substance



Ernest Starling

THE BIRTH OF ENDOCRINOLOGY

In **1899**, Bayliss and Starling demonstrated nervous control of the peristaltic wave that moves food through the intestine, then in 1902 they showed that a chemical messenger, not a nervous one, stimulated pancreatic secretions. This was the discovery of the first hormone, secretin. However, Starling didn't coin the term 'hormone', based on the Greek 'ormao' (to arouse or excite), until three years later during his Croonian Lectures at the Royal College of Physicians in London.

ESTABLISHING THE SOCIETY FOR ENDOCRINOLOGY

The Society was founded secondary to the launch of *Journal of Endocrinology*. The idea was conceived on a bus going to Croydon Airport by Sir Charles Dodds Bart FRS, Sir Frank Young FRS, Sir Alan Parkes FRS and Lord Zuckerman OM KCB FRS. In early **1946**, all contributors to the journal were invited to meet its Council of Management, to discuss the formation of a Society. The contributors formed the foundation members of the Society and, at the first formal Annual General Meeting on 24 July 1946, Alan Parkes was elected Chairman. The founding principles of the Society were to:

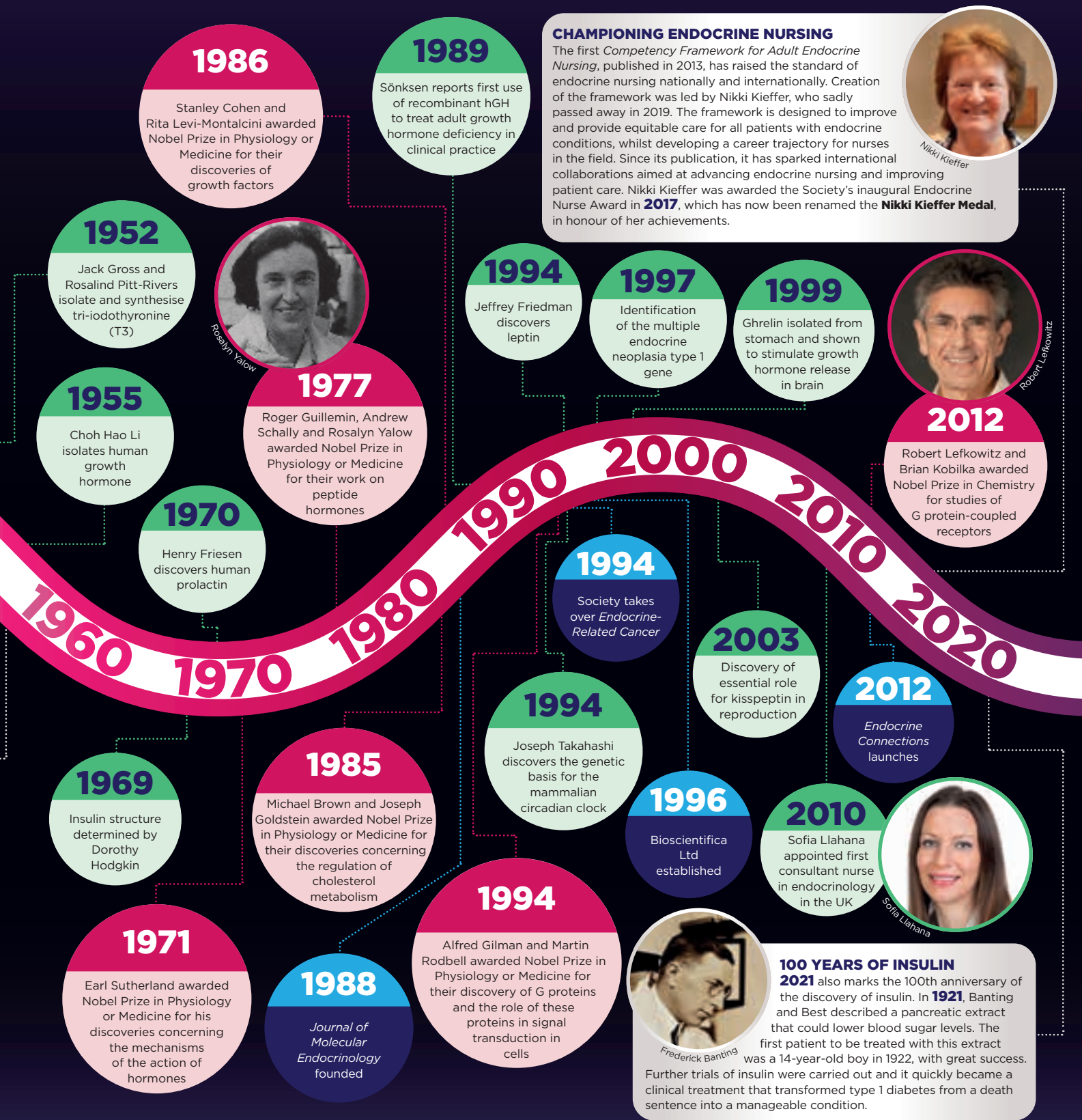
- own and publish a journal
- advance knowledge concerning the glands of internal secretion
- promote the advancement of knowledge in endocrinology.

THE FATHER OF NEUROENDOCRINOLOGY

Geoffrey Harris was the first to describe hypothalamic control of the pituitary in **1955**. He showed that stimulation of the hypothalamus, rather than the pituitary, could evoke ovulation in rabbits. This led to more work that ultimately demonstrated that the pituitary gland is controlled by peptide hormones released by the hypothalamus to the pituitary, via the hypophyseal portal system. The hormones regulated via this mechanism are crucial for basic function and survival, including growth, reproduction, metabolism and stress regulation. Harris' original work formed the foundation of the work expanded upon by Guillemin, Schally and Yalow, who shared the Nobel Prize in Physiology or Medicine for their work on characterising peptide hormones.



Geoffrey Harris



1986

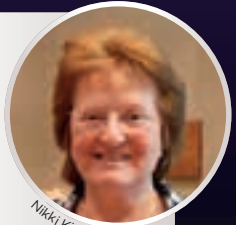
Stanley Cohen and Rita Levi-Montalcini awarded Nobel Prize in Physiology or Medicine for their discoveries of growth factors

1989

Sönksen reports first use of recombinant hGH to treat adult growth hormone deficiency in clinical practice

CHAMPIONING ENDOCRINE NURSING

The first *Competency Framework for Adult Endocrine Nursing*, published in 2013, has raised the standard of endocrine nursing nationally and internationally. Creation of the framework was led by Nikki Kieffer, who sadly passed away in 2019. The framework is designed to improve and provide equitable care for all patients with endocrine conditions, whilst developing a career trajectory for nurses in the field. Since its publication, it has sparked international collaborations aimed at advancing endocrine nursing and improving patient care. Nikki Kieffer was awarded the Society's inaugural Endocrine Nurse Award in **2017**, which has now been renamed the **Nikki Kieffer Medal**, in honour of her achievements.



Nikki Kieffer

1952

Jack Gross and Rosalind Pitt-Rivers isolate and synthesise tri-iodothyronine (T3)



Rosalyn Yalow

1994

Jeffrey Friedman discovers leptin

1997

Identification of the multiple endocrine neoplasia type 1 gene

1999

Ghrelin isolated from stomach and shown to stimulate growth hormone release in brain



Robert Lefkowitz

1977

Roger Guillemin, Andrew Schally and Rosalyn Yalow awarded Nobel Prize in Physiology or Medicine for their work on peptide hormones

2012

Robert Lefkowitz and Brian Kobilka awarded Nobel Prize in Chemistry for studies of G protein-coupled receptors

1955

Choh Hao Li isolates human growth hormone

1970

Henry Friesen discovers human prolactin

1960

1970

1980

2000

2010

2020

1994

Society takes over *Endocrine-Related Cancer*

2003

Discovery of essential role for kisspeptin in reproduction

2012

Endocrine Connections launches

1994

Joseph Takahashi discovers the genetic basis for the mammalian circadian clock

1985

Michael Brown and Joseph Goldstein awarded Nobel Prize in Physiology or Medicine for their discoveries concerning the regulation of cholesterol metabolism

1969

Insulin structure determined by Dorothy Hodgkin

1996

Bioscientifica Ltd established

2010

Sofia Llahana appointed first consultant nurse in endocrinology in the UK



Sofia Llahana

1971

Earl Sutherland awarded Nobel Prize in Physiology or Medicine for his discoveries concerning the mechanisms of the action of hormones

1988

Journal of Molecular Endocrinology founded

1994

Alfred Gilman and Martin Rodbell awarded Nobel Prize in Physiology or Medicine for their discovery of G proteins and the role of these proteins in signal transduction in cells



Frederick Banting

100 YEARS OF INSULIN

2021 also marks the 100th anniversary of the discovery of insulin. In **1921**, Banting and Best described a pancreatic extract that could lower blood sugar levels. The first patient to be treated with this extract was a 14-year-old boy in 1922, with great success. Further trials of insulin were carried out and it quickly became a clinical treatment that transformed type 1 diabetes from a death sentence into a manageable condition.

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**LET'S
MAKE IT
HAPPEN**

THE BIRTH OF ENDOCRINOLOGY AND NEUROENDOCRINOLOGY

WRITTEN BY JOHN WASS



I'd like to write a few words about some of the founding figures in endocrinology, whose names echo through the halls of our discipline's history. Who were they, and what were their contributions?



William Bayliss. ©Wellcome Collection

Ernest Starling (born London, 1866) was a clever, ebullient and outgoing person who won every prize at Guy's Hospital – his medical school, from where he qualified in 1889. Together with **William Bayliss** (born 1860), he performed important experiments on gastrointestinal secretion, reporting in the 1904 Croonian Lecture at the Royal Society that acid introduced into the duodenum caused the brisk secretion of pancreatic juice by means of a messenger that they called 'secretin'.^{1,2} In June 1905, Starling coined the word 'hormone', derived

from the Greek 'to stimulate or arouse', and used it to describe chemical messengers. Thus, endocrinology was born.

The theories of **Geoffrey Harris** (born 1913) gave rise to the field of neuroendocrinology. It was known that ovulation occurred after mating in rabbits. Harris devised experiments electrically stimulating the hypothalamus and pituitary. These demonstrated that the hypothalamus was key in triggering ovulation.³ Grigore Popa, a Romanian physiologist, thought the blood passed from the pituitary to the hypothalamus but, by the 1950s, it was clear that there was neural control of the pituitary gland. This was the title of a book by Harris, published in 1955.⁴ Harris also had great arguments with the leading anatomist Solly Zuckerman as to whether this was all true. Harris showed that the lesions in Zuckerman's experiments were not correctly placed in the hypothalamus.

Harris was smart, original and highly competitive. This included playing his fellows in the squash court and out-drinking them in the pub. Unfortunately, he died young, at 58, of bleeding oesophageal varices.

Both **Roger Guillemin** and **Andrew Schally** were influenced by Harris's theories. Guillemin was born in France in 1924. His medical studies were interrupted during the Second World War by his work for the French Resistance, when he helped his compatriots cross the mountains into Switzerland. Later, Guillemin contracted tubercular meningitis and was among the first people to be treated with intrathecal isoniazid. Guillemin moved to the USA, and demonstrated that pituitary cells secreted adrenocorticotrophin in the presence of hypothalamic tissue.⁵

Andrew Schally (born Poland, 1926) spent the Second World War in Romania, while his father fought



Roger Guillemin



Andrew Schally

with the Allied Forces. In 1945, he travelled to live in the UK, where he was first introduced to medical research. He later became a US citizen.

For a short time, Schally worked in Guillemin's laboratory. However, there was slow progress and each blamed this on the other. This was the origin of intense competition between the two, and they subsequently worked in separate laboratories.

Their research led to the discovery of multiple hypothalamic

hormones. Thyrotrophin-releasing hormone was isolated first, Schally's paper being published six days before that of Guillemin. Their second race concerned luteinising hormone-releasing hormone: once again Schally published ahead of Guillemin. However, Guillemin was successful in first describing the third of the hypothalamic hormones: somatostatin.⁶ Guillemin and Schally each received a quarter of the Nobel Prize in Physiology and Medicine in 1977 for their discoveries concerning the peptide hormone production of the brain.

The other half of the 1977 Prize was awarded to **Rosalyn Yalow** for development of radioimmunoassays for peptide hormones. Yalow trained as a physicist at a time when it was very much a male-only preserve, at one point taking a job as a typist in an attempt to access graduate courses. Her productive partnership with the medically trained **Solomon A Berson** led to their Nobel Prize-winning discoveries, though sadly Berson did not survive to share the Prize.



Rosalyn Yalow

Through the endeavours of these individuals, endocrinology truly came of age. It is said that to be successful in research you need to be smart, work hard, and have luck. While I think this is still true, it is also important to have a good time!

JOHN WASS

Professor of Endocrinology, University of Oxford

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AN INTERVIEW WITH... SAFWAAN ADAM

Safwaan Adam (Manchester) is a Clinician-in-Practice within the Society's Leadership and Development Programme, which recognises and nurtures emerging talent in endocrinology. Following undergraduate and early postgraduate training in South Africa and New Zealand, Safwaan proceeded to specialist endocrinology training in the UK.

Which endocrinologists have most inspired you?

I have been very fortunate to have worked with a number of superb colleagues, but three people have, I feel, really shaped my career in endocrinology so far.

My first job in medicine was with Kenneth Huddle in Johannesburg, who was an exceptional clinician. He demonstrated the value of innovation when managing complex disease, even in the context of limited availability of resources. Akheel Syed, who supported me throughout my specialty training, has been someone who exhibits how a passion for clinical research can drive excellent clinical practice. He always transmits a positive energy, which is arguably the greatest motivational tool for younger colleagues. Peter Trainer has been my mentor, teacher and friend. Peter has this unique ability to drive a person's self-belief and desire to achieve excellence, especially in relation to patient care. His distinct leadership style, where he always seems to see the 'bigger picture', has been particularly inspirational.

What do you enjoy about your work?

My current role as a consultant endocrinologist at the Christie Hospital in Manchester brings with it a number of privileges. Complex and rare conditions are referred to us, and I relish the challenge in the diagnostic process. The great merit of working as an endocrinologist is that I am usually optimistic, as many of the conditions in endocrinology clinics are treatable. A positive consequence of this is the formation of relationships in the long term follow up of patients, which I find particularly rewarding. My role also allows me to maintain a curiosity to drive clinical research, which is something I particularly enjoy. Additionally, my position enables me to contribute to the education and development of more junior colleagues, which I also value.

'The great merit of working as an endocrinologist is that I am usually optimistic, as many of the conditions in endocrinology clinics are treatable.'

What was the best thing about your first SfE BES conference?

I first attended in 2012 in Harrogate. Amongst the aspects I particularly enjoyed was the ability to network with colleagues from different parts of the country. There are still friends from my 'first BES' that I am in touch with today. (Alas, COVID got in the way of our annual meet up last year.) Moreover, as a very young clinician, I left the meeting inspired, as the quality of the plenaries was exceptional. I still remember some of the topics discussed at the Meet the Expert sessions. These remain 'must attend' sessions for me, especially as they have evolved over the years.

What have you enjoyed about working with the Society?

The Society has contributed to my development through the awarding of travel grants, educational possibilities and, importantly, the opportunities it has afforded me in my current role as a Leadership and Development Programme Awardee. Any hesitation I may have previously had about approaching senior members for advice quickly faded away. I was first encouraged by the Society to approach them and then, most importantly, by a warmth from the members themselves, when they willingly offer up guidance. As a young endocrinologist, this support has been invaluable. The reason I relate my experience is to encourage other young endocrinologists to embrace what the Society can offer them.



Safwaan Adam

What are the clinical practice milestones in your career?

Increased recognition of the impact of endocrine disorders on the risk of metabolic and cardiovascular disease has been especially important. We also have better tools to manage the risk of cardiovascular disease, through a growth in the treatment arsenal against metabolic disorders such as type 2 diabetes, obesity and dyslipidaemia. I feel this will have a profound impact in reducing premature mortality in our patients.

The other major milestone has been the development of exciting functional imaging techniques to detect (and treat) adrenal and neuroendocrine tumours. Endocrinology has been at the forefront of embracing 'theranostics', an ever-growing field.

What will the next 75 years see in endocrine practice?

Endocrinology remains a very dynamic field and has always been at the forefront of discovery and experimentation. Much of our progress has been built on the merging of laboratory and clinical science, including genetics.

In the next 75 years, we will personalise patient care even further by embracing data and computational science within our cluster of innovation. Due to the nature of endocrinological disease, there are still limitations in the inclusion of many of our patients in clinical research. I think this will improve with the advent and expansion of data science and electronic patient records, as we will become more reliant on 'real world' data. In essence, the 'crystal ball' shows me that (compared with our current resources in managing common and rare disease) we will have a greater evidence base for decision-making.

Colleagues who do the admirable job of managing patients with type 1 diabetes have already shown us how technological monitoring advancements can benefit patient care. In the next 75 years, I see expansion in the use of these devices to replace more hormones, allowing us the potential to use artificial intelligence to mimic physiology better. I also envisage an ability to do more investigations in a patient's own home, as our diagnostic sample repertoire expands: for example, using saliva, hair and urine (instead of relying on blood samples) to diagnose and monitor endocrinological conditions.

AN INTERVIEW WITH... ROB FOWKES

Rob Fowkes is Professor of Comparative Endocrinology, and Chair of Small Animal Clinical Sciences, at the College of Veterinary Medicine, Michigan State University (MSU), having previously been based at the Royal Veterinary College, London, for 17 years. He has served on several committees for the Society for Endocrinology.

Who has inspired you most in endocrinology?

There are far too many to list here. I've been inspired throughout my career, at different stages, by different people. Early on, it was the likes of Julia Buckingham, Alan McNeilly, Craig McArdle, Holly Ingraham, Mark Roberson, Paul Stewart and Larry Jameson. More recently, great clinical researchers like Dale Abel, Lauren Fishbein, Gary Hammer, Gerald Raverot, and basic scientists such as David Hodson, Gareth Lavery, Lori Raetzman and Sally Camper. All are brilliant scientists, each of them have led by example; all produce beautiful data.

What do you enjoy most about your work?

Well, it would simply be nice to be able to physically go to work, for starters! I've always loved lab work, as well as trying to persuade the next generation of researchers why endocrinology is by far the greatest discipline to study. I love teaching (but am less fond of the admin). And I genuinely enjoy my interactions with clinical colleagues, in human and veterinary medicine. I always find them engaging, thought-provoking, and usually rather awe-inspiring.

Any words of wisdom for aspiring endocrinologists?

If you genuinely love endocrine research, keep going. You'll have far more knock-backs than you can imagine, but the days when things go right are priceless. And I truly believe the endocrine community is one of the most generous and welcoming. I love sharing data and ideas with friends and colleagues in the UK and around the world.

What are you proudest of in your career so far?

Singing Blur's 'Song 2' with Professor Ashley Grossman at karaoke during my leaving do at Barts.

Which was your first SfE BES conference?

This is a good 'un. BES 1996 in Dublin. It was my first research conference, so I was rather nervous. I need not have worried – within 30 minutes of landing in Dublin, Drs McArdle, Jessop and Harbuz had taken me to the pub for my first of many pints of Guinness and Murphy's. In fact, a highlight of that conference was the free stout on draft at the banquet. Those were the days.

Rob Fowkes



What has been best about working with the Society?

The Society for Endocrinology has always been good to me. I think the level of support it provided early career scientists (even in the last century...) was exceptional. I've loved being involved with various committees (the original incarnation of the Young Endocrinologists, the Education, Science, Programme and Publication Committees and, of course, Council).

I'm still amazed at the support that we received from Sue Thorn in setting up the Autumn Endocrine Retreat (which subsequently became the Career Development Workshop). No other societies were funding trainees for that sort of networking experience. But I will always associate the Society with one person in particular – the one and only Julie Cragg.

How much has your work changed?

Like most fields, it's been the emergence of high throughput or genome-wide tools. They answer questions in months that previously would have taken decades.

'Companion animals are such an incredible resource in which to examine common endocrinopathies. We need to harness the power of these patients to help accelerate our understanding of endocrine diseases and their aetiologies.'

What are the biggest challenges in research now?

How do we recover from COVID restrictions? Some people have been less disrupted than others, in terms of having access to labs. Many people have seen their research activities stop completely – and starting up again will be a huge challenge, as will trying to secure any funding from a diminishing pool of financial resources. I shall be nurturing my start-up funds at MSU particularly carefully.

What are you looking forward to in the future of the field?

I think we are still woefully bad at looking for alternative models of spontaneous disease, when we actually have access to wonderful resources on our doorstep. Conventional models, such as mice and zebrafish, are still extremely powerful; but we keep those animals in tightly regulated environments that bear little resemblance to our own.

Companion animals, however, are such an incredible resource in which to examine common endocrinopathies. Obesity, type 1 and type 2 diabetes, infertility, hyperthyroidism, hypothyroidism, Cushing's, Addison's, acromegaly all spontaneously occur, all on relatively diverse genetic backgrounds, in animals that share our environment and resources. We need to harness the power of these patients to help accelerate our understanding of endocrine diseases and their aetiologies.

What major changes will endocrinology see in the next 75 years?

I'm concerned that we, as a discipline, will be consumed by others – and yet I still believe that endocrinology is all-encompassing. Every single body system is affected by hormones. The only thing I know with *any* certainty is that someone, somewhere, will always be working on 11 β -HSD...

WIEBKE ARLT: THE STORY OF AN INSPIRING ENDOCRINOLOGIST

WRITTEN BY HELEN SIMPSON

For this anniversary issue of *The Endocrinologist*, I had the absolute pleasure of interviewing Professor Wiebke Arlt. Wiebke is someone I greatly admire, and so I was delighted when we had a great chat one Saturday morning.

Wiebke's formal titles include William Withering Chair of Medicine, University of Birmingham; Director of the Institute of Metabolism and Systems Research (IMSR); College Lead for Equality, Diversity and Inclusion; Honorary Consultant at the Queen Elizabeth Hospital Birmingham and the Birmingham Health Partners Centre for Endocrinology, Diabetes and Metabolism; Fellow of the Academy of Medical Sciences; and Editor-in-Chief of *European Journal of Endocrinology*. While these summarise some of her roles, they only scratch the surface of describing what she does.

THE EARLY YEARS

Her endocrinology journey started in Cologne, Germany, where, as an anonymous second year medical student in a class of 650, she thought about giving up medicine after studying basic science with seemingly little relevance to clinical practice. In her third year, she had to choose an elective. There were eight places: seven in cardiology, one in endocrinology. She chose the endocrinology ward as, at that time, she wanted to do neuroscience, and thought there might be more links with endocrinology than cardiology.

The experience sounds similar to working in UK tertiary units 'back in the day' – a ward full of phaeos, Cushing's, acromegaly and 10-minute blood samples, giving her a great clinical training and understanding of endocrine physiology. In addition, this is where she met Bruno Allolio, the ward endocrine registrar. During this time, she first felt seen as a person and clearly had a joy for clinical medicine.

A GATEWAY TO ENDOCRINOLOGY

Subsequently, she chose to do a part-time research MD. She chose a project with Bruno as her supervisor. He talked her into studying the adrenal gland and, whilst Wiebke was not initially convinced, she went with it. The rest, as they say, is history.

The project looked at the effect of suramin in African sleeping sickness and adrenocortical carcinoma. The latter resulted in a phase 2 clinical trial (published in 1994 in our very own *Clinical Endocrinology* (Arlt W *et al.* 1994 *Clinical Endocrinology* **41** 299–307).

'When she moved to the UK, she perceived it as 'revolutionary', with its provision of childcare and part-time working...'

GAINING EXPERIENCE IN UGANDA

As part of her MD project, Wiebke went on an elective in 1990 to Uganda. At that time, Uganda was an unsafe country: civil wars were raging, and she describes herself as young and naive. To me, she seems very brave and independent-minded and, after this experience, I imagine nothing would phase her.

She was in Uganda for four months, travelling from clinic to clinic in a Jeep to see patients with sleeping sickness. The sole doctor in the region stayed put at the only hospital, so Wiebke (a medical student) would be the only

'doctor' seen by many patients in the numerous health centres. Supervision consisted of a prebooked weekly phone call to Bruno. Here, she learnt decision-making and thinking quickly on her feet, and a love of research was born.

Thankfully, she safely returned to Germany. Bruno had moved on to a professorship in Würzburg. While she waited for a job with him, she trained in neurology/psychiatry (Wiebke is a qualified psychoanalyst).

An opening came up in Würzburg, and she finished her training in endocrinology, diabetes and general medicine. It was here she started working on dehydroepiandrosterone (DHEA) biosynthesis. She learnt from Bruno how to ask a big question and to drill deep. A great deal of DHEA is synthesised in the adrenal, and little was understood of its function.

THE ROAD TO BIRMINGHAM

She then was awarded a German Research Council postdoc fellowship and moved to the University of California at San Francisco to work with Walter Miller, a pioneer in steroid metabolism and congenital adrenal hyperplasia. During this time, she presented her adrenal work at a meeting in Toronto, Canada, and met Paul Stewart, who invited her to visit him in Birmingham in the UK. She was inspired by Paul's approach to the investigation of the cortisol–cortisone shuttle. This informed her strategy for her own work on androgen biosynthesis and metabolism as she progressed.

In 2002, she moved to join the Birmingham team, supported by a German Research Council Heisenberg Senior Fellowship. Since then, she has gone from strength to strength, starting off with an MRC Senior Clinical Fellowship looking at pre-receptor metabolism of DHEA, and then an MRC Programme Grant.

FRUITFUL CLINICAL RESEARCH

Cedric Shackleton was another important mentor, colleague and friend. He introduced Wiebke to multiteroid profiling by mass spectrometry. She continued to blend clinical and scientific work and her group went on to discover mutations in the co-factor enzymes cytochrome P450 oxidoreductase and 3'-phosphoadenosine 5'-phosphosulfate (PAPS) synthase 2: genetic causes of androgen deficiency and androgen excess.

In 2003, she started a specialist adrenal service which now has grown to involve a multidisciplinary team, has nurse-led clinics and has served as a model across a variety of clinical services in Birmingham. Here, clinical care drives research, demonstrating a symbiotic relationship between the two. Some 98% of patients agree to participate in research after informed consent, providing samples to biobanks and research projects.

Angela Taylor joined in 2009 as a postdoc, bringing expertise in tandem mass spectrometry for steroid analysis. Through collaboration with computer scientists, Wiebke established steroid metabolomics. This combines mass spectrometry-based steroid profiling with data analysis by machine learning-based algorithms: a blueprint for moving machine learning into clinical medicine. It is bearing fruit now, following the successful completion of the European Network for the Study of Adrenal Tumors (ENS@T) EURINE-ACT adrenal tumour project, which brings this high throughput methodology to characterise adrenal nodules ever closer to clinical practice.

EQUALITY AND DIVERSITY

Another theme that has stayed with Wiebke is equality and diversity. Her mother was offered a scholarship at grammar school which was taken away, as her mother's parents did not think girls required a higher education. Her father was a chemist, the first generation of the family to go to university. It was from him that she derived her interest in steroid biochemistry. She credits her parents for supporting and encouraging her to do whatever she wanted.

In Würzburg, there was not a single female professor. When she moved to the UK, she perceived it as 'revolutionary', with its provision of childcare and part-time working, hardly available anywhere in German clinical and academic centres at that time.

AS A MENTOR

Wiebke has a number of mentoring roles, and is convinced that kindness and an interest in people brings out the best in them. Her passion for mentoring seems to have stemmed from observing Bruno Allolio, who always took time to understand what trainees felt was truly important to them. He once even successfully redirected a 'failed' junior doctor, who had always wanted to be an astronaut, to the European Space Agency.

At the Academy of Medical Sciences, Wiebke served as the Chair of the Starter Grant Panel for Clinical Lecturers, and is a long-standing Mentor for the SUSTAIN Leadership and Mentorship Programme for female researchers leading their first group. She is keen to also expand this model to others who may be held back due to different circumstances, such as first-generation scholars, migrants and LGBTQ researchers.

Wiebke Arlt



In her view, it is important that we all have mentors external to our departments, as there are lots of dependencies and anxieties in our workplaces. We all have different leadership styles and, by learning about ourselves, we can become more effective at supporting others. Another model she uses is sitting in with clinical trainees during clinic, to see how they work, and targeting where they could do things differently, in order to help them develop.

'She is a wonderful inspiration for those in the Society for Endocrinology, to take us through the next 75 years.'

A WELCOMING SOCIETY

Reflecting on the Society for Endocrinology, Wiebke describes it as 'welcoming and helpful' when she arrived in the UK. She found the networking opportunities to meet endocrinologists from other UK centres invaluable, and describes the meetings as 'world class with a smaller, family atmosphere' compared with some of the larger European and American meetings.

Wiebke has also very much been part of the Society, chairing the Clinical Committee, where she started the work on the Steroid Emergency Card, and serving on the Programme Organising Committee and as Programme Chair for Clinical Endocrine Update.

Over the next 75 years, Wiebke feels the Society just needs to carry on doing what it is doing. The Society adapts rapidly, has a broad base, bringing all members of the endocrine community, public and patients together, and keeps an open mind. She says, 'Keep up the good work!'. In her mind, the future challenges we need to meet include motivating the brightest young sparks to become clinical and academic endocrinologists. This also requires us to address the current shortage in opportunities for academic endocrinologists after obtaining a certificate of completion of training.

AN INSPIRING CAREER

What really shone out to me during our chat was how, whilst Wiebke has many roles, they interlink and feed from her experiences over her career. There is a thread to Wiebke's journey, as she builds on themes at each career stage. These include a love for endocrinology and the enduring impact of Bruno Allolio.

The combination of clinical, scientific and leadership roles is key, as is being passionate about mentoring: supporting people to develop as individuals. Fittingly, she is most proud of the people she has helped to train, to become academic and clinical leaders. There are 'Arlties' now around the world. These include Irina Bancos (USA), Nicole Reisch (Germany), Dimitra Vassiliadi (Greece), Johannes (Hans) Hofland (The Netherlands) and Mick O'Reilly (Ireland), to name but a few, and too many to mention in Birmingham currently.

As for Wiebke herself, I can't imagine after working in Uganda, as she did during her formative years, she is scared of much – and I cannot envisage her being put off by anything. She is a wonderful inspiration for those in the Society for Endocrinology, to take us through the next 75 years.

HELEN SIMPSON

PATIENTS, PARTNERSHIPS AND A PANDEMIC



WRITTEN BY JO GREY, JULIA PRIESTLEY AND ANNA WOOLLVEN

'Charity has a long and proud history. Today we regard charity and the broader voluntary sector as crucial to the functioning of a democratic system.'

Sir Stephen Bubb, Director, Charity Futures

Patient support groups (PSGs) have long played a vital role in supporting patients to better understand and live with their health conditions. We asked endocrine-related PSGs who work with the Society for Endocrinology, including the ones we represent, how they have adapted to respond to patients' evolving needs and what their priorities may be in the wake of COVID-19.

A LONG HISTORY

The UK's oldest surviving charity is the King's School in Canterbury, an Anglican school set up in the year 597 by St Augustine. Indeed, the act of charity has its basis in most centuries-old religions. Yet today, the breadth of charitable purposes reaches far beyond religion, though still with the same aim of helping others in need. This is nowhere more evident than in the health arena where, even before the Middle Ages, hospitals were built using charitable donations. With the advent of the Government-funded NHS, and patients subsequently developing a more equal voice in their care and management, charities became more focused on individual patients and diseases. This gave birth to the era of the modern PSG.

PSGs in the field of endocrinology in the UK are some of the finest examples of health-related, non-profit organisations, despite many being classed as small charities and still being run entirely by volunteers. All groups provide patient information literature and support patients through events and conferences, with some also offering helplines, advocacy services and research funding. There is no better example of how PSGs can effectively adapt and mobilise to address the changing needs of patients than their responses to the COVID-19 pandemic.

SHARING, CARING AND WORKING TOGETHER

Our shared goal of supporting patients means endocrine PSGs have a long history of working well with one another. The response to the pandemic highlighted this generosity of spirit, as groups shared resources and ideas about how to adapt to the challenges. For example, the Addison's Disease Self-Help Group (ADSHG) embraced opportunities for collaboration by running a survey with other PSGs regarding COVID-19 and adrenal insufficiency.

“We've taken a collaborative approach to support the healthcare profession, the learned societies, umbrella organisations and PSGs in the development of resources and guidance for people with Addison's disease and, in the process, have formed partnerships that we hope will last way beyond the pandemic.

ADSHG

COVID-19 highlighted the value of the groups' partnerships with medical advisors. Many were instrumental in supporting the production of new resources at speed and helped answer the influx of queries that PSGs received from concerned patients about the pandemic.

Professor Simon Pearce (Newcastle upon Tyne), who advises the British Thyroid Foundation (BTF), said this approach was valuable for patients and healthcare professionals alike.

“In those uncertain weeks at the beginning of the COVID-19 pandemic, it was immensely helpful to be able to direct many of my patients with anxieties about having an autoimmune disease or taking carbimazole to the authoritative advice on [the BTF] website and social media feeds. It feels more important than ever for us to work synergistically with patient groups.

Simon Pearce

Even outside COVID-19, there was, and is, plenty of co-operation between organisations and their members, societies and individual health professionals. The ADSHG and its members were involved in the development of the new Steroid Emergency Card, the BTF recently collaborated with the Royal National Institute of Blind People (RNIB) to update and review its patient factsheet about thyroid eye disease, and the Association for Multiple Endocrine Neoplasia Disorders (AMEND) has provided feedback to the European Society of Endocrinology on patient group engagement.

It is notable that all our organisations either engage as Patient and Public Involvement representatives in research projects themselves or can aid recruitment of specific patient communities to do so.

MEETING PATIENTS' CHANGING NEEDS

PSGs were swift to adopt or expand virtual working, embracing the flexibility of platforms such as Zoom to help maintain normal services for our communities during the COVID-19 pandemic. This move to a digital format has enabled many PSGs to expand their reach by removing the physical and cost barriers of meeting up in person. It has also allowed geographically distanced groups of patients to meet online at this socially distanced time.

In many cases, the change to working virtually will live on after the immediate impact of COVID-19, as an efficient and inexpensive way to engage with and support a wider audience.

“The introduction of virtual groups has been a big change for us – and one that will live on long after the pandemic has ended. Our two-day conference went virtual ... and we noticed an increase in demand for information – our Facebook groups have grown considerably, and our website is getting twice the hits it was before.

Child Growth Foundation

“ [Due to virtual working we] are able to attend more case meetings, tribunals and court cases as there is no travelling.

Prader-Willi Syndrome Association

In addition to providing support and reassurance, PSGs have continued their vital role in listening to patients' experiences and concerns and feeding these back to the clinicians who care for them. AMEND were among several PSGs who set up surveys to consult with their communities about their experiences during the pandemic.

“ We continue to gather information from people with MEN who have had COVID, with results regularly updated and shared publicly. In addition, we run an occasional survey on the emotional impact of COVID-19 on those with MEN.

AMEND

Most PSGs have received more engagement from the public during the pandemic, which often translated into higher demand for services. COVID-19 has certainly helped many PSGs to increase their reach. This has been driven by patients' appetite for more information about their health conditions and the potential impact of the virus on them. Patients have also turned to PSGs when access to NHS care has been more limited.

CHALLENGES

For the majority of PSGs, the increased engagement and workload have been a challenge. In some instances, staff had to be furloughed, and many volunteers were unable to carry out their roles, often due to their own health concerns.

“ We had to furlough staff, so demand has increased, so my workload has increased.

Turner Syndrome Support Society

“ We maintained and actually increased our helpline service (with no extra staff) – taking on triaging of calls for specialist centres/clinics where clinical nurse specialists were redeployed.

Neuroendocrine Cancer UK

Endocrine-related PSGs are possibly some of the best supported groups in terms of medical volunteers and society funding. The Society for Endocrinology offers a biennial project grant scheme and conference travel support, a Facebook group for patient group leaders, and no end of members volunteer as trustees and medical advisors. This valuable support is appreciated.

“ Thanks to our Patient Support Grant from the Society for Endocrinology, we managed to launch a new group for pheochromocytoma and paraganglioma syndromes with a new identity, website, patient literature resources and social media channels, all in the middle of a pandemic!

AMEND

Nevertheless, some of the biggest challenges faced by PSGs during the pandemic have been finding ways to maintain regular income in the face of increased competition for grants and the cancellation of major annual fundraising events.

“ More people are competing for grants, so we face stiff competition.

Brittle Bone Society

Additionally, almost all PSGs struggle to find the right staff and to recruit volunteers, who are vital to the services we provide, even without a pandemic.

“ Our biggest challenge is staffing to do everything we want to do. Projects regularly get deferred due to lack of time.

Anon

LOOKING AHEAD

The future for PSGs will depend on remaining focused on our ethos and shared goals. We must meet the challenges of more digital times, whilst ensuring that those members of our communities who are less digitally able have equal access to resources and support.

Ultimately, our future will be about reducing the negative impact of the changes that COVID-19 has brought about, such as less face-to-face care and longer waiting lists. It is also about harnessing the many positives, which include opportunities for new ways of delivering care and support, using technologies for efficient working and to benefit patients, and making the most of the louder voice the pandemic has given us.

“ [Success will mean] providing holistic, inclusive support services, utilising the best of digital and more traditional communications methods to reach even more people...

The Pituitary Foundation

Finally, it is safe to say that we have all missed the face-to-face contact of conferences, and we are very much looking forward to seeing everyone again at SIE BES 2021 in Edinburgh!

JO GREY

Association for Multiple Endocrine Neoplasia Disorders

JULIA PRIESTLEY and ANNA WOOLLVEN

British Thyroid Foundation

WITH THANKS TO:

Addison's Disease Self-Help Group
Alex, the Leukodystrophy Charity
Association for Multiple Endocrine
Neoplasia Disorders
British Thyroid Foundation
Brittle Bone Society
Butterfly Thyroid Cancer Trust
CAH Support Group
Child Growth Foundation

Haemochromatosis UK
Klinefelter's Syndrome Association UK
Neuroendocrine Cancer UK
Parathyroid UK
The Pituitary Foundation
Prader-Willi Syndrome Association
UK
Thyroid Eye Disease Charitable Trust
Turner Syndrome Support Society

CORPORATE PARTNERSHIPS: PREDICTING A PRODUCTIVE FUTURE

Our Society is supported by industry partners who enable us to achieve our charitable aims and form an integral part of the endocrine community. Rapid advances in medical science are more possible when academia, charities and industry collaborate, in an open way, to bring advancements to clinical practice. As we celebrate the Society's 75th anniversary, what does the future hold for industry collaborations in endocrinology?

We interviewed three of our corporate partners to get their perspectives:

Sara Elgott (SE), Country Lead UK, Ireland and Nordics, HRA Pharma Rare Diseases

Avideh Nazeri (AN), Vice President, Clinical, Medical & Regulatory, Novo Nordisk UK

Sarah Wesley (SW), Medical Affairs Manager Rare Diseases, Pfizer UK

WHAT IS YOUR ROLE?

SW: As a medical affairs professional, I provide medical and scientific support to healthcare professionals and professional bodies, to facilitate a bridge between Pfizer and the healthcare community. I'm lucky enough to work within Pfizer's Rare Disease business. Our company mission is to bring breakthroughs that change patients' lives, and I'm very proud that I get to play my part in that. Interestingly, I never actually applied to work at Pfizer! I was working in clinical research at a company which then merged with Pfizer in 2000. Little did I know that, more than 20 years later, I would still be here at Pfizer working in medical affairs, and still be just as inspired by the work I do, the people I work with, and the patients we aim to support.

AN: I lead a number of brilliant teams who are committed to developing new medicines for many serious diseases, including diabetes, obesity and rare blood and rare endocrine conditions, reducing health inequalities and improving patient outcomes across the UK. The clinical development team works across phases I to IV in collaboration with the research and development units of NHS Trusts. Our regulatory and safety team secure approvals of licenses and monitor the risk-benefit of medicines, and the medical affairs and education teams focus on facilitating positive patient care through education and partnership.

“I think we will see the introduction of new technologies and artificial intelligence to help facilitate timely diagnosis, patient empowerment and more personalised treatments.

Sara Elgott



SE: Since I joined HRA Pharma Rare Diseases as country lead for the UK, Ireland and Nordics a year ago, I have endeavoured to continue the good work of my predecessors, as well as introducing some new patient-centric solutions and projects. An example of this has been the introduction of a home phlebotomy service to further assist the required drug monitoring for one of our medicines, to alleviate the need for hospital visits for vulnerable cancer patients.

WHAT DO YOU ENJOY MOST ABOUT YOUR WORK?

AN: I enjoy steep learning curves, and the knowledge that what you are working on today can potentially touch millions of lives for many years afterwards. I also enjoy working with highly committed professionals who bring passion and grit to work every day.

“Over the years, the industry has really started putting patients and their insights at the heart of everything we do, and rightly so.

Sarah Wesley



SW: I'm very lucky to get to work so closely with incredible clinicians every day – I feel I've really built some strong relationships based on a shared passion for supporting patients. But what I enjoy most of all is working directly with patient groups and associations. That work is where I really feel the most human connection with the people whose lives we are trying to improve. As an example, I'm particularly proud of campaigns like 'Missing an X', which we launched with support from the Turner Syndrome Support Society and which resulted in more than 880,000 views of our patient video and 90,000 website visits – a true demonstration of reaching the community we serve.

HOW MUCH HAS THE FIELD CHANGED?

SE: Diagnosis and treatment for people with rare endocrine disorders has vastly improved over the years. As knowledge and expertise grow, NHS services have been improved and many expert centres have been established. Links with similar experts in other countries are also increasing.

I think we are seeing increasing co-operation between different stakeholders and the sharing of best practice and experience, which is critical in rare diseases. We are also witnessing specialist nurses and other allied healthcare professionals becoming increasingly important to patients and their families.

SW: After 20 years in this industry, a lot has changed. We still have a way to go, but understanding of rare diseases and endocrine conditions has increased exponentially: not just the potential causes and our knowledge of treatment, but also understanding of the physical and mental impact on patients.

Above all, I think the biggest change I've seen is the rise in patient-centricity. Over the years, the industry has really started putting patients and their insights at the heart of everything we do, and rightly so. Despite all the great changes, we still have a long way to go in certain areas, in particular in ensuring equal access to treatments.

AN: There have been significant changes since I was a junior doctor working in diabetes 25 years ago. The understanding of many new pathways impacting metabolic conditions is improving, leading to development of new medicines. The integration of technology and digital health is also developing, along with the way industry now collaborates with academia and governments. It has become a true partnership to elevate science and improve lives.

WHAT ARE THE BIGGEST CHALLENGES?

SE: Unfortunately, COVID-19 has had a severe effect on patients and their families, as well as stretching services to their limits. I am afraid this may continue at some level for many years to come. Companies will need to ensure that any new treatments are cost-effective, demonstrate the usual safety and efficacy in clinical trials, and come with any necessary support programmes for patients and their families.

SW: COVID-19 has presented a number of challenges, from interruptions to routine healthcare, adapting to the sudden rise of digital and telehealth, and emotional and mental impacts on almost everyone. This is a big challenge we need to overcome to ensure there is no lasting impact.

Another challenge is our amazing but ever-changing NHS. As it evolves over time, this presents challenges to ensure we are moving with these changes and not against them. The biggest challenge in my view is closing the treatment access gap. As innovation has increased over the years, new treatment options have come to the table for previously untreatable conditions. But without the whole system also evolving, we run the risk of leaving patients without access to such breakthroughs.

AN: A big challenge in my opinion is identifying the next generation of therapeutics that can prevent and potentially cure serious chronic diseases. It is important to take those ideas from bench to bed and make them available to all patients, not just a select few developed nations. I think in the case of chronic diseases such as diabetes, we saw the impact of twin epidemics in 2020. Whilst vaccination seems to be the silver lining for the COVID-19 pandemic, diabetes prevention and remission remain a big global challenge.

HOW DO YOU COLLABORATE WITH THE WIDER ENDOCRINE COMMUNITY?

AN: In my field, collaboration is crucial at all stages. We work with academia and healthcare professionals from the inception of new medicines, to the first in-person trials, and after licensing when the medicines are used in the real world. Societies are our partners who recognise that chronic diseases are societal challenges, and that the way to tackle them is through education, partnerships and mutual collaboration. We learn from our partners and peers and we share our science and knowledge transparently and ethically.

SW: The role of successful partnerships in healthcare has suddenly had a lot of attention, as many have led the way in fighting COVID-19. On a personal level, I really value my collaborations – such as our successful partnership with the Society for Endocrinology. Collaborations with clinical experts, academics and societies can fill knowledge gaps and enhance

“ We learn from our partners and peers and we share our science and knowledge transparently and ethically.

Avideh Nazeri



understanding, so we can better support patients and drive new thinking. They are vital.

SE: HRA Pharma Rare Diseases collaborates by ensuring we listen to the needs of the community and address those needs by co-creating projects and services that make a difference. We strive to facilitate timely diagnosis, support clinical studies, broaden global access to much needed standard treatments and endeavour to improve outcomes and experiences.

WHAT WILL BE THE MAJOR CHANGE(S) IN ENDOCRINOLOGY?

SW: How we gather and analyse data in this field will undoubtedly change. We've already started to see these changes accelerate due to the pandemic. Gathering, integrating and interpreting data in new ways will certainly continue to define the future: for example, increasingly using real-world evidence and phase IV studies to allow more tailored information and offer optimised patient outcomes.

I hope to also see an acceleration in patients' access to treatment, supported by methods that look at the value the medicine brings, and seeing prevention as an investment, not a cost. I also think that patient and healthcare professional collaboration and decision making will continue to improve, hopefully enhanced by the rise of digital tools.

AN: The future will be about prevention, precision and prolonging health outcomes. Stem cell therapy has the potential to take the future of chronic diseases to a different trajectory. Adjusting body weight set point may become a reality, leading to prevention of many chronic metabolic and other diseases. And artificial intelligence and digital solutions will help with the development and precision of medicines.

SE: I think we will see the introduction of new technologies and artificial intelligence to help facilitate timely diagnosis, patient empowerment and more personalised treatments. I hope that we can take a leading position and be ahead of that curve!

ABOUT OUR CORPORATE SUPPORTERS



Pfizer is the world's largest research-based pharmaceutical company. Its goal is to discover, develop, manufacture and deliver quality, effective prescription medicines to treat and help prevent disease. The company has an excellent heritage in endocrinology and is an industry leader in long term surveillance studies, supporting advances in medical and scientific knowledge.



By partnering with our extraordinary community, **HRA Pharma Rare Diseases** has a personal commitment to playing its part in tackling current challenges, reducing the time to accurate diagnosis, enabling global access to treatment and optimising long term management. It shares our purpose: to improve quality of life and the experience of care for families affected by rare diseases.



Novo Nordisk is a global healthcare company with more than 95 years of innovation and leadership in diabetes care. This heritage has given the company experience and capabilities that also enable it to help people defeat obesity, haemophilia, growth disorders and other serious chronic diseases.

EXPANDING ENDOCRINOLOGY'S AUDIENCE OVER 75 YEARS

WRITTEN BY LORNA SMITH AND CHANNA JAYASENA

When the Society for Endocrinology was formed, 75 years ago this year, one of the founding objectives was 'to consider what other steps we can take to promote the advancement of knowledge in endocrinology'.

Supporting public engagement is a key aspect of fulfilling this aim, spreading the collective knowledge of our members to audiences beyond our own membership and journal readerships. The Public Engagement Committee is formed of member volunteers. They have a vision to increase the quality of debate and discussion about hormones, to enable individuals to make better decisions about their health, and to position the Society for Endocrinology as a trusted and responsive authority on the subject.

Over the decades since the Society was established, our scientific knowledge regarding endocrinology has expanded greatly. The Society has become an important voice for spreading awareness of endocrine disorders and communicating the importance of hormones in public health and everyday life.

WORKING WITH THE MEDIA

Media engagement remains one of the key ways in which research related to endocrinology may be accessed by the public. The Society has developed a network of Media Ambassadors from volunteer members, to provide the crucial expert input that helps journalists assess whether stories are of public interest and are factually accurate. In its simplest role, public engagement such as this raises the profile of endocrinology, the Society and its members.

This role will continue to be vital for maintaining and enhancing public interest and funding in this critical area of research and medicine, as well as for attracting the next generation of talented scientists, clinicians and nurses necessary for the continued development of the field.

A TRUSTED AUTHORITY

The Society provides the media, patients and pupils with a trusted authority on endocrine matters, also informing members of the public who may be concerned, confused or simply curious.

In addition to the Society's media links through the Science Media Centre, the Society for Endocrinology launched the website *You and Your Hormones*, in 2011. This website provides a valuable platform for members to communicate about endocrinology and create resources for teachers,

students and patients. The website was awarded a Green Tick earlier this year by the UK Association for Science Education (ASE). Across the board, experts increasingly find themselves competing with false and misleading information ('fake news'), propagated and magnified by social media algorithms. Quality assurance of platforms such as *You and Your Hormones* by the ASE or other regulatory bodies will be a vital part of establishing and restoring trust between experts (including endocrinologists) and the public when we communicate our work online, now and in the future.

A TWO-WAY PROCESS

Perhaps most importantly, public engagement is a two-way process of learning. It helps endocrinologists keep their work's significance and relevance to society in perspective. One goal of the Society's Public Engagement Committee has been to empower our members to undertake effective public engagement through informing, collaborating and consulting. The Society has worked to deliver a number of public engagement training sessions and workshops for members over the years.

The introduction of the Public Engagement Grant has also been a key strategy to encourage the participation of our members in outreach, and to generate new resources and ideas for engagement in the future. Some of these ideas and awardees have since been showcased at science festivals across the UK such as the Big Bang Fair and our Schools Outreach Workshop events held during the SIE BES conferences in 2018 and 2019.

INCREASED DIGITAL DEMAND

With the arrival of COVID-19 in 2020, public engagement became a predominantly online affair. However, two initiatives in particular have enabled us to rapidly meet this increased demand for digital consumption. The introduction of the Society's new Student Video Awards for undergraduates has generated a range of short videos, explaining endocrine subjects to a general audience. We also released the first series of our new podcast 'Hormones: The Inside Story', thanks to our partnership with First Create The Media.

Building on the success of the Schools Outreach Workshops, we have started to develop a Virtual Outreach Project to bring our traditionally hands on, face-to-face activities directly into the classroom via technology. This project will connect our expert members with classes and students across the UK, allowing them to share their endocrine knowledge and their own personal STEM (science, technology, engineering and maths) career experiences. Crucially, these projects have helped meet another important objective of public engagement: widening participation and access to endocrine careers to students from all locations and backgrounds. In this regard, inviting schools to attend locationally restricted festivals or workshops at their own cost can often fall short.

With new rounds of grants and video awards, a second podcast series in development and new projects and partnerships underway, we hope the Society for Endocrinology can continue to expand its role as a conduit for endocrinologists at all career stages and of all backgrounds to connect with the general public, for at least another 75 years!

LORNA SMITH

Research Associate, Faculty of Life Sciences and Medicine,
King's College London
Member, Public Engagement Committee

CHANNA JAYASENA

Reader in Reproductive Endocrinology, Imperial College London
Chair, Public Engagement Committee



DEVOTED TO THE RARE

By partnering with your extraordinary community, HRA Pharma Rare Diseases has a personal commitment to playing our part in **tackling** current challenges, **reducing** the time to accurate diagnosis, **enabling** global access to treatment and **optimising** long-term management.

We share your purpose, to improve quality of life and the experience of care for families affected by rare diseases.

Let's make lack of awareness around rare diseases

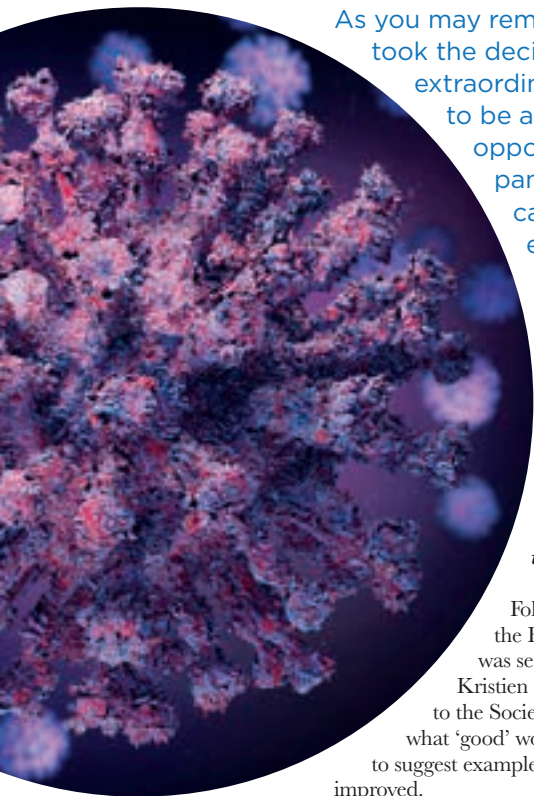
EVEN RARER

HRAPharma
Rare Diseases

TOGETHER, we leave no patient behind

To contact HRA Pharma Rare Diseases in the UK & Ireland email med.info.uk@hra-pharma.com or call 0800 917 9548.

Reshaping ENDOCRINE CLINICAL PRACTICE



As you may remember, the Society took the decision in May 2020, at an extraordinary meeting of Council, to be at the forefront of the opportunity afforded by the pandemic: to reshape clinical care and delivery of training in endocrinology across the UK.

The project's mission was *'to transform clinical care, bringing together UK-wide expertise across clinical endocrinology to define the most effective, future-focused endocrinology service models and recommend how these are best implemented and sustained within the NHS post-COVID-19.'*

Following an open call to the membership, the Future of Endocrinology working group was set up, chaired by John Newell-Price and Kristien Boelaert. All patient groups affiliated to the Society were asked for their input regarding what 'good' would look like for their community, and to suggest examples of the ways in which services could be improved.

The priority output of the group, 'Planning for the COVID second wave', was delivered in October 2020, with advice and resources published at www.endocrinology.org/2ndwave. At the end of June 2021, outputs were delivered by the remaining sub-groups:

- (a) education and training
- (b) the primary care interface and
- (c) digital care options and models of care (including patient self-care).

All four outputs were then pulled into one final report of recommendations, including exemplars, tools and resources, which members will have the opportunity to feedback on.

The Society's Clinical Committee will consider how to support effective dissemination of the working group outputs and implementation of the recommendations. It will also look at setting the Committee's future agenda, according to the key priorities raised, and determine how to review the associated impact.

Working group members will present a summary of the outcomes on **18 November at SfE BES 2021 in Edinburgh**. We hope that the new Members' Area Resource Hub will be launched at that time, with content written and curated by the working group.

From December 2021, members can provide their own items for the Resource Hub. This will become a valuable source of information, and we encourage all members to use it, and contribute information and resources as they see fit.

Have your say AND HELP SHAPE THE FUTURE OF OUR DISCIPLINE

Apply for our Committee vacancies, to make a difference.

Our Committees bring fresh perspectives and new ideas that better represent our diverse membership, champion all facets of endocrinology, and help maximise the impact of your Society.

Being part of a Committee can also help to advance your own career through sharing your expertise with a more diverse team of colleagues,

further developing your leadership skills and enabling you to work with other leaders in the field.

We are looking for a range of applicants from all career stages, backgrounds, areas of expertise and locations to ensure more equal representation of our diverse membership.

Check our current vacancies at www.endocrinology.org/committees and apply by **1 October 2021**.



“Being part of a Committee has shaped my thinking on the future of education in endocrinology, thanks to different viewpoints on many topics from colleagues across the country.
Stephanie Baldeweg
Clinical Committee Chair



“Being part of a Committee has been a great opportunity for networking with more senior endocrinologists, and getting both myself and my work recognised. It has also given me the opportunity to chair sessions at the SfE BES conferences and to take part in public engagement activities. These are very useful to have on your CV.
Kate Lines
Former Early Career Steering Group Chair
2019 Leadership & Development Awardee

Get ready FOR EDINBURGH

We can't wait to reconnect with you, your colleagues and world-renowned experts at Sfe BES 2021 in Edinburgh this November.



Sfe BES provides a fantastic opportunity to exchange knowledge and forge new collaborations across our global endocrine community. Nevertheless, we understand that some are still facing challenges that mean attending Sfe BES 2021 in person may not be possible. So, we are offering an alternative registration that enables access to selected meeting content on demand following the live event.

Our cancellation policy has also been updated to be more flexible for attendees that need to cancel their ticket ahead of the meeting, with a 90% refund. Alternatively, attendees may convert to an on-demand ticket for 50% of the original booking cost. Learn more about the new online registration and our updated cancellation policy on the meeting website.



DELVE INTO AN ENDOCRINE NETWORK

Join your peers from across the globe working in your sub-specialty. Each of the six endocrine themes will have its own dedicated **Symposium**, **Meet the Expert**, **Oral Communications** and **Oral Poster** sessions and **Selected Posters** featured in our poster hall, allowing you to explore every field in depth. The six endocrine themes are:

- Metabolism, Obesity and Diabetes
- Adrenal and Cardiovascular
- Thyroid
- Reproductive and Neuroendocrinology
- Endocrine Cancer and Late Effects
- Bone and Calcium

Sfe BES 75TH ANNIVERSARY LECTURE

We are delighted to be celebrating our Society reaching its 75th year with **Dr Jeffrey Friedman** (New York, USA) who is renowned for his discovery of leptin. The **Sfe BES 75th Anniversary Lecture** *Discovery of a new hormone, leptin, and its roles in health and disease* will be taking place on **Monday 8 November** at 10:15am (GMT).

Sfe BES 2021 - PRESIDENTIAL LECTURE

Professor Sir Peter Ratcliffe (Oxford), winner of the Nobel Prize for Physiology or Medicine in 2019 will be delivering the **Sfe BES 2021 Presidential Lecture** - *Elucidation of cellular oxygen sensing mechanisms: implications for medicine*. We hope to see you there at 5:00pm (GMT) on **Monday 8 November**.

MEET THE EXPERTS

Learn about technological developments and new clinical practices in the field by attending one of our **Meet the Expert** sessions. These talks allow you to gain valuable insights and get your questions answered.

HOW DO I...?

Throughout Sfe BES 2021 you will have the opportunity to learn from specialists in the field, covering various topics designed to improve procedures and practices.

FOR OUR NURSE COMMUNITY

Sfe BES 2021's streamlined programme has been built with nurses in mind. Stay updated by attending three dedicated nurses' sessions taking place on **Tuesday 9 November**.

NEW AWARDS

We are also launching three new awards for Sfe BES 2021:

- **Nikki Kieffer Medal**
- **Outstanding Clinical Practitioner Award**
- **Teaching Achievement Award**

These prizes will be awarded on **Tuesday 9 November** at 11:00am (GMT).

**Join your
peers and
register today!**
Hurry, the early-bird
registration rates end
on **29 September
2021 at 11:59 pm
(BST)**.



Discover more at
**[endocrinology.org/
sfebes2021](https://endocrinology.org/sfebes2021)**

 **@soc_endo**

 **@SocietyforEndocrinology**